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Textile machinery - Safety requirements - Part 1: Common requirements

EESTI STANDARDIKESKUS
ESTONIAN CENTRE FOR STANDARDISATION

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

Käesolev Eesti standard EVS-EN ISO 11111-1:2009 sisaldab Euroopa standardi EN ISO 11111-1:2009 ingliskeelset teksti.	This Estonian standard EVS-EN ISO 11111-1:2009 consists of the English text of the European standard EN ISO 11111-1:2009.
Standard on kinnitatud Eesti Standardikeskuse 30.09.2009 käskkirjaga ja jõustub sellekohase teate avaldamisel EVS Teatajas.	This standard is ratified with the order of Estonian Centre for Standardisation dated 30.09.2009 and is endorsed with the notification published in the official bulletin of the Estonian national standardisation organisation.
Euroopa standardimisorganisatsioonide poolt rahvuslikele liikmetele Euroopa standardi teksti kättesaadavaks tegemise kuupäev on 22.07.2009.	Date of Availability of the European standard text 22.07.2009.
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This European Standard was approved by CEN on 3 July 2009.

EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

Management Centre: Avenue Marnix 17, B-1000 Brussels

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Foreword

This document (EN ISO 11111-1:2009) has been prepared by Technical Committee ISO/TC 72 "Textile machinery and accessories" in collaboration with Technical Committee CEN/TC 214 “Textile machinery and accessories” the secretariat of which is held by SNV.

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of an identical text or by endorsement, at the latest by January 2010, and conflicting national standards shall be withdrawn at the latest by January 2010.

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 ISO 11111-1:2005.

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 EC Directives.

For relationship with EC Directives, see informative Annex ZA and ZB, which are integral parts 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 the United Kingdom.

Endorsement notice

The text of ISO 11111-1:2009 has been approved by CEN as a EN ISO 11111-1:2009 without any modification.

Annex ZA
(informative)

Relationship between this International Standard and the Essential Requirements of EU Directive 98/37/EC

This International Standard has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association to provide a means of conforming to Essential Requirements of the New Approach Directive 98/37/EC.

Once this standard is cited in the Official Journal of the European Communities under that Directive and has been implemented as a national standard in at least one Member State, compliance with the normative clauses of this standard confers, within the limits of the scope of this standard, a presumption of conformity with the relevant Essential Requirements of that Directive and associated EFTA regulations.

WARNING: Other requirements and other EU Directives may be applicable to the product(s) falling within the scope of this International standard.

Annex ZB
(informative)

Relationship between this International Standard and the Essential Requirements of EU Directive 2006/42/EC

This International Standard has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association to provide a means of conforming to Essential Requirements of the New Approach Directive 2006/42/EC on machinery.

Once this standard is cited in the Official Journal of the European Communities under that Directive and has been implemented as a national standard in at least one Member State, compliance with the normative clauses of this standard confers, within the limits of the scope of this standard, a presumption of conformity with the relevant Essential Requirements of that Directive and associated EFTA regulations.

WARNING — Other requirements and other EU Directives may be applicable to the product(s) falling within the scope of this standard.

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Introduction

ISO 11111-1 to ISO 11111-7 were prepared simultaneously by ISO/TC 72 and CEN/TC 214 and adopted under the Vienna Agreement in order to obtain identical standards on technical safety requirements for the design and construction of textile machinery.

ISO 11111 as a whole is intended for use by any person concerned with the safety of textile machinery, for example, textile machinery designers, manufacturers and systems integrators. It is also of interest to users of textile machines and safety experts.

This document is a type C standard as stated in ISO 12100-1. The various parts of ISO 11111 deal with significant hazards generated by machines used in the textile industry. The machinery concerned and the extent to which hazards are covered are indicated in the scope of this 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.

For machines or machine elements not dealt with in the relevant parts of ISO 11111, the designer is to perform a risk assessment according to ISO 14121-1 and evolve means for reducing the risk from significant hazards.

This part of ISO 11111 contains a summary of safety requirements and/or measures for frequently occurring hazards of textile machinery (see Clause 5) which apply whenever referred to in this, or the other parts, of ISO 11111.

Significant hazards and corresponding safety requirements and/or measures for certain machine elements (e.g. rollers) and their combination of textile machines are also described (see Clause 6).

The various parts of ISO 11111 address significant hazards and corresponding safety requirements and/or measures for specific types of textile machines. As far as possible, these are treated by way of reference to Clauses 5 and 6 of this part of ISO 11111 and other cross-references (see general safety requirements), thus reducing considerably the volume by avoiding many repetitions. The standard for a specific textile machine will normally consist of this part of ISO 11111 and the specific part relevant to that machine. ISO 11111-2 to ISO 11111-7 may also contain exceptions or additions to the requirements given in this part of ISO 11111 (see specific safety requirements).

Textile machinery — Safety requirements —

Part 1: Common requirements

1 Scope

1.1 This part of ISO 11111 specifies safety requirements for frequently occurring hazards common to the types of textile machinery and the hazards of certain machine elements covered by ISO 11111-2 to ISO 11111-7.

1.2 It is applicable to machinery plant and related equipment intended to be used in the textile industry for the following:

— the opening, cleaning, blending, carding, preparation subsequent to carding, spinning and other processing of fibres (staple and filament) and other materials to form yarn or nonwoven material (including felts);

— the winding, doubling, twisting, texturing, etc. of yarns and the processing of yarns preparatory to weaving and knitting;

— the weaving, knitting, lace-making and similar utilization of yarn, etc., to form fabric;

— the formation of braid, cord, strand, rope, twine, net, etc., except take-up reels of stranding and laying machinery;

— processes, including the pretreatment, bleaching, dyeing, printing and finishing of fibre, yarn, fabric, braid, cord, etc. and final assembly for despatch;

— the piece dyeing of made-up goods;

— finishing of warp and weft knitting, including hosiery, other than assembly of the finished product (e.g. sewing);

— carpet manufacture, by weaving, tufting and other processes.

This part of ISO 11111 applies to all machinery, plant and equipment used during the processes listed above, including equipment to enable automated operation of the machines and processes in either free-standing or complex installations, such as pneumatic fibre transportation, but excluding other transportation between the interfaces of the machines.

NOTE 1 The standard for a specific textile machine will normally consist of two parts: this part of ISO 11111 and the specific part of ISO 11111 relevant to that machine. However, in the case of nonwoven lines, which is covered by ISO 11111-3, ISO 11111-2, ISO 11111-6, and ISO 11111-7 are also to be taken into account.

This part of ISO 11111 does not deal with specific requirements for pressure containment.

NOTE 2 In the EU and EFTA specific Directives for pressure vessels and electromagnetic compatibility among others exist.

1.3 ISO 11111 (all parts) addresses hazards arising from the transport, assembly and commissioning of the machinery, its adjustment, use, maintenance, decommissioning, dismantling and disposal. Manual loading/unloading is considered to be part of the normal operation of the machinery.

1.4 This and the other parts of ISO 11111 are not applicable to machinery, plant and related equipment used for

— the manufacture of continuous filaments and man-made fibres up to and including the formation of the first textile package (e.g. continuous filament cheese, staple fibre bale),

— hackling and carding of flax and similar,

— the manufacture of spunbonded and melt blown nonwovens,

— the formation and making up of garments, household and industrial textile goods, and the pressing and die cutting of nonwoven fabric,

— the laundering and drycleaning of made-up textile goods,

— servicing of textile machines (e.g. machines for cardwire mounting, cleaning machines for components of printing machines), and

— certain cutting devices, e.g. log-slitting device, laser cutting, high pressure water jets, ultrasonic device.

NOTE 3 The machines and equipment listed in Annex E are used in the textile industry but are not within the scope of this document.

1.5 This and the other parts of ISO 11111 are not applicable to machinery intended for use in potentially explosive atmospheres.

1.6 This and the other parts of ISO 11111 are not applicable to machines which are manufactured before the dates of publication of the standards.

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.

ISO 5232, *Graphical symbols for textile machinery*

ISO 9902 (all parts), *Textile machinery — Noise test code*

ISO 9902-1:2001/Amd.1:2009, *Textile machinery — Noise test code — Part 1: Common requirements*

ISO 9902-2:2001/Amd.1:2009, *Textile machinery — Noise test code — Part 2: Spinning preparatory and spinning machinery*

ISO 9902-3:2001/Amd.1:2009, *Textile machinery — Noise test code — Part 3: Nonwoven machinery*

ISO 9902-4:2001/Amd.1:2009, *Textile machinery — Noise test code — Part 4: Yarn processing, cordage and rope manufacturing machinery*

ISO 9902-5:2001/Amd.1:2009, *Textile machinery — Noise test code — Part 5: Weaving and knitting preparatory machinery*

ISO 9902-6:2001/Amd.1:2009, *Textile machinery — Noise test code — Part 6: Fabric manufacturing machinery*

ISO 9902-7:2001/Amd.1:2009, *Textile machinery — Noise test code — Part 7: Dyeing and finishing machinery*

ISO 10218-1:2006, *Robots for industrial environments — Safety requirements — Part 1: Robot*

ISO 11111-2:2005, *Textile machinery — Safety requirements — Part 2: Spinning preparatory and spinning machines*

ISO 11111-2:2005/Amd.1:2009, *Textile machinery — Safety requirements — Part 2: Spinning preparatory and spinning machines*

ISO 11111-3:2005, *Textile machinery — Safety requirements — Part 3: Nonwoven machinery*

ISO 11111-3:2005/Amd.1:2009, *Textile machinery — Safety requirements — Part 3: Nonwoven machinery*

ISO 11111-4:2005, *Textile machinery — Safety requirements — Part 4: Yarn processing, cordage and rope manufacturing machinery*

ISO 11111-4:2005/Amd.1:2009, *Textile machinery — Safety requirements — Part 4: Yarn processing, cordage and rope manufacturing machinery*

ISO 11111-5:2005, *Textile machinery — Safety requirements — Part 5: Preparatory machinery to weaving and knitting*

ISO 11111-5:2005/Amd.1:2009, *Textile machinery — Safety requirements — Part 5: Preparatory machinery to weaving and knitting*

ISO 11111-6:2005, *Textile machinery — Safety requirements — Part 6: Fabric manufacturing machinery*

ISO 11111-6:2005/Amd.1:2009, *Textile machinery — Safety requirements — Part 6: Fabric manufacturing machinery*

ISO 11111-7:2005, *Textile machinery — Safety requirements — Part 7: Dyeing and finishing machinery*

ISO 11111-7:2005/Amd.1:2009, *Textile machinery — Safety requirements — Part 7: Dyeing and finishing machinery*

ISO 11161:2007, *Safety of machinery — Integrated manufacturing systems — Basic requirements*

ISO/TR 11688-1:1995, *Acoustics — Recommended practice for the design of low-noise machinery and equipment — Part 1: Planning*

ISO 11691, *Acoustics — Measurement of insertion loss of ducted silencers without flow — Laboratory survey method*

ISO 11821, *Acoustics — Measurements of the in situ sound attenuation of a removable screen*

ISO 12100-1:2003, *Safety of machinery — Basic concepts, general principles for design — Part 1: Basic terminology, methodology*

ISO 12100-2:2003, *Safety of machinery — Basic concepts, general principles for design — Part 2: Technical principles and specification*

ISO 13849-1:2006, *Safety of machinery — Safety-related parts of control systems — Part 1: General principles for design*

ISO 13849-2:2003, *Safety of machinery — Safety-related parts of control systems — Part 2: Validation*

ISO 13850:2006, *Safety of machinery — Emergency stop — Principles for design*

ISO 13851:2002, *Safety of machinery — Two-hand control devices — Functional aspects and design principles*

ISO 13854:1996, *Safety of machinery — Minimum gaps to avoid crushing of parts of the human body*

ISO 13857:2008, *Safety of machinery — Safety distances to prevent hazard zones being reached by upper and lower limbs*

ISO 14118:2000, *Safety of machinery — Prevention of unexpected start-up*

ISO 14119:1998, *Safety of machinery — Interlocking devices associated with guards — Principles for design and selection*

ISO 14119:1998/Amd.1:2007, *Safety of machinery — Interlocking devices associated with guards — Principles for design and selection — Amendment 1: Design to minimize defeat possibilities*

ISO 14121-1, *Safety of machinery — Risk assessment — Part 1: Principles*

ISO/TR 14121-2, *Safety of machinery — Risk assessment — Part 2: Practical guidance and examples of methods*

ISO 14122-1, *Safety of machinery — Permanent means of access to machinery — Part 1: Choice of fixed means of access between two levels*

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

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

ISO 14122-4, *Safety of machinery — Permanent means of access to machinery — Part 4: Fixed ladders*

ISO 14123-1:1998, *Safety of machinery — Reduction of risks to health from hazardous substances emitted by machinery — Part 1: Principles and specifications for machinery manufacturers*

ISO 14123-2:1998, *Safety of machinery — Reduction of risks to health from hazardous substances emitted by machinery — Part 2: Methodology leading to verification procedures*

ISO 14163, *Acoustics — Guidelines for noise control by silencers*

ISO 15667, *Acoustics — Guidelines for noise control by enclosures and cabins*

IEC 60204-1:2005, *Safety of machinery — Electrical equipment of machines — Part 1: General requirements*

IEC 60447:2004, *Basic and safety principles for man-machine interface, marking and identification — Actuating principles*

IEC 61310-1:2007, *Safety of machinery — Indication, marking and actuation — Part 1: Requirements for visual, acoustic and tactile signals*

IEC 61496-1:2004, *Safety of machinery — Electro-sensitive protective equipment — Part 1: General requirements and tests*

IEC 61496-1:2004/Amd.1:2007, *Safety of machinery — Electro-sensitive protective equipment — Part 1: General requirements and tests*

IEC 61496-2:2006, *Safety of machinery — Electro-sensitive protective equipment — Part 2: Particular requirements for equipment using active opto-electronic protective devices (AOPDs)*

IEC 61496-3:2006, *Safety of machinery — Electro-sensitive protective equipment — Part 3: Particular requirements for Active Opto-electronic Protective Devices responsive to Diffuse Reflection (AOPDDR)*

IEC 62061:2005, *Safety of machinery — Functional safety of safety-related electrical, electronic and programmable electronic control systems,* corrected by IEC 62061:2005 Corr.1:2005

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

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

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+A1:2008, *Safety of machinery — The positioning of protective equipment in respect of approach speeds of parts of the human body*

EN 1005-1, *Safety of machinery — Human physical performance — Part 1: Terms and definitions*

EN 1005-2, *Safety of machinery — Human physical performance — Part 2: Manual handling of machinery and component parts of machinery*

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

EN 1005-4, *Safety of machinery — Human physical performance — Part 4: Evaluation of working postures and movements in relation to machinery*

EN 1127-1:1997, *Explosive atmospheres — Explosion prevention and protection — Part 1: Basic concepts and methodology*

EN 1760-1, *Safety of machinery — Pressure sensitive protective devices — Part 1: General principles for the design and testing of pressure sensitive mats and pressure sensitive floors*

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 1760-3, *Safety of machinery — Pressure sensitive protective devices — Part 3: General principles for the design and testing of pressure sensitive bumpers, plates, wires and similar devices*

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

EN 12198-3*, Safety of machinery — Assessment and reduction of risks arising from radiation emitted by machinery — Part 3: Reduction of radiation by attenuation or screening*

EN 12464-1, *Light and lighting — Lighting of work places — Part 1: Indoor work places*

EN 60825-1:1994/A2:2001, *Safety of laser products — Part 1: Equipment classification, requirements and user's guide; Amendment A2*

3 Terms and definitions

For the purposes of this part of ISO 11111, the terms and definitions given in ISO 12100-1 and EN 953, and the following apply.

NOTE Where values are applicable to terms defined in this clause, these values are indicated in Annex A.

3.1
stopping time
time taken by a machine or machine part to reach a stand-still after the signal to stop has been given