INTERNATIONAL STANDARD

ISO 11111

First edition
1995-09-15

Safety requirements for textile machinery

Exigences de sécurité pour le matériel textile

Reference number
ISO 11111:1995(E)

Contents

International Organization for Standardization
Case postale 56 • CH-1211 Genève 20 • Switzerland

Printed in Switzerland

Annexes

Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

International Standard ISO 11111 was prepared by Technical Committee ISO/TC 72, *Textile machinery and allied machinery and accessories*.

Annexes A, B and C form an integral part of this International Standard. Annex D is for information only.

Introduction

This International Standard was prepared simultaneously by ISO/TC 72 and CEN/TC 214 and adopted under the Vienna Agreement in order to obtain identical standards on safety requirements for textile machinery.

This International Standard deals with the hazards generated by machines used in the textile industry. The great number and variety of such machines render impractical the preparation of individual standards.

Clause 5 contains a summary of frequently occurring safety requirements and/or measures for textile machines which apply whenever referred to in later clauses.

Clause 6 describes significant hazards and corresponding safety requirements and/or measures for certain prevalent component items (e.g. rollers).

Clauses 7 to 12 contain significant hazards and corresponding safety requirements and/or measures for all types of textile machines. As far as possible these are treated by way of references to clauses 5 and 6 and other cross-references, thus reducing considerably the volume of this International Standard by avoiding many repetitions.

The examples given in clauses 6 to 12 are proven solutions, representing the state of the art with respect to safety at the time of standard preparation. To enable further technical progress, other solutions are also allowed, provided they attain at least the same safety level.

This page intentionally left blank

Safety requirements for textile machinery

1 Scope

This International Standard is intended for use by any person concerned with the safety of textile machinery, for example, textile machinery designers, manufacturers, users, systems integrators, safety experts.

1.1 This International Standard is applicable to all 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 preparation, 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.

1.2 This International Standard is not applicable to machinery, plant and related equipment used for:

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

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

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

— machines used for servicing of textile machines (e.g. cardwire servicing);

— certain cutting devices in 6.11.

1.3 This International Standard applies to the generality of textile machinery, particularly all the machinery plant and equipment which is used during the processes listed in 1.1, and including equipment to enable automated operation of the machines and processes in either free-standing or complex installations, but excluding transportation between the interfaces of the machines.

1.4 This International Standard does not give specific technical advice about:

— the phases of "life" of the machine other than use;

— electric shock;

— fluid power systems and components;

— noise;

— laser;

— ionizing radiation;

— fire;

— gas;

— explosion;

— ergonomics;

— isolation of energy sources;

— intervention during normal operation;

— pressure-sensitive safety devices;

and it does not cover the hazards and technical measures dealing with the containment of pressure in 6.7.2, 12.1.10, 12.1.11, 12.2.2, 12.2.6, 12.2.8, 12.2.9, 12.2.10 and 12.2.11, for high temperature dyeing machines.

1.5 This International Standard applies primarily to machines which are manufactured after the date of publication of this International Standard.

1.6 The guidance contained in this International Standard is based on the presumption that the designer has completed a risk analysis of the machine under consideration. This will enable him to identify and fulfil the significant requirements for his machine as stipulated by this International Standard.

In that very limited number of applications where the requirements seem excessive, deviation from those requirements should be fully justified by detailed risk assessment, comparison with this International Standard and design evaluation. All this information should be recorded in the technical construction file and kept available for external assessment.

2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this International Standard. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this International Standard are encouraged to investigate the possibility of applying the most recent editions of the standards indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

ISO 5232:1988, *Graphical symbols for textile machinery.*

ISO 9902:1993, *Textile machinery acoustics — Determination of sound pressure levels and sound power levels emitted by textile machines — Engineering and survey methods.*

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

ISO 11690-1:—[1], *Acoustics — Recommended practice for the design of low-noise workplaces — Part 1: Noise control strategies.*

ISO 11690-2:—[1], *Acoustics — Recommended practice for the design of low-noise workplaces — Part 2: Noise control measures.*

IEC 519-1:1984, *Safety in electroheat installations — Part 1: General requirements.*

IEC 519-9:1987, *Safety in electroheat installations — Part 9: Particular requirements for high-frequency dielectric heating installations.*

EN 292-1:1991, *Safety of machinery — Basic concepts, general principles for design — Part 1: Basic terminology, methodology.*

EN 292-2:1991, *Safety of machinery — Basic concepts, general principles for design — Part 2: Technical principles and spcifications.*

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

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

EN 418:1992, *Safety of machinery — Emergency stop equipment; Functional aspects, principles for design.*

EN 563:1994, *Safety of machinery — Temperatures of touchable surfaces; Ergonomics data to establish temperature limit values for hot surfaces.*

EN 574:—[1], *Safety of machinery — Two-hand control devices.*

EN 626-1:1994, *Safety of machinery — Part 1: Reduction of risk to health from hazardous substances emitted by machinery — Principles and specifications for machinery manufacturers.*

EN 811:—[1], *Safety of machinery — Safety distances to prevent danger zones being reached by the lower limbs.*

EN 953:—[1], *Safety of machinery — General requirements for the design and construction of guards (fixed, movable).*

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

EN 982:—[1], *Safety requirements for fluid power systems and components — Hydraulics.*

EN 983:—[1], *Safety requirements for fluid power systems and components — Pneumatics.*

EN 999:—[1], *Safety of machinery — Hand/arm speed — Approach speed of parts of the body for the position of safety devices.*

EN 1037:—[1], *Safety of machinery — Isolation and energy dissipation — Prevention of unexpected start-up.*

---

1) To be published.