
**Safety requirements for dry-cleaning
machines —**

Part 1:
Common safety requirements

*Exigences de sécurité pour les machines de nettoyage à sec —
Partie 1: Exigences générales de sécurité*



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Contents

Page

Foreword.....	iv
Introduction	v
1 Scope	1
2 Normative references	1
3 Terms and definitions.....	3
3.1 Machine configuration.....	3
3.2 Machine components	4
3.3 Operating phases.....	5
3.4 Miscellaneous	5
4 Safety requirements and/or protective measures	7
4.1 Mechanical hazards	7
4.2 Thermal hazards	8
4.3 Noise hazards.....	9
4.4 Vibration hazards.....	10
4.5 Hazards due to neglect of ergonomic principles in machine design.....	10
4.6 Hazards related to emergency stop and lack of cooling	10
4.7 Hazards related to energy supply disconnection.....	10
4.8 Hazards related to failure of the power supply, other supplies, control system	11
4.9 Electrical hazards	11
4.10 Hazards generated by solvents.....	12
4.11 Hazards related to loss of stability	15
4.12 Hazards related to falling from a higher level.....	15
4.13 Hazards related to the refrigeration system.....	15
5 Verification of the safety requirements and/or protective measures.....	16
6 Information for use	17
6.1 General.....	17
6.2 Signals and warning devices.....	17
6.3 Instruction handbook	17
6.4 Marking	21
Annex A (normative) Noise measurement.....	22
Annex B (informative) List of significant hazards.....	27
Bibliography	29

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.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of technical committees is to prepare International Standards. 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.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

ISO 8230-1 was prepared by Technical Committee ISO/TC 72, *Textile machinery and accessories*, Subcommittee SC 5, *Industrial laundry and dry-cleaning machinery and accessories*.

This first edition of ISO 8230-1, together with ISO 8230-2:2008 and ISO 8230-3:2008, cancels and replaces ISO 8230:1997, of which it constitutes a technical revision.

ISO 8230 consists of the following parts, under the general title *Safety requirements for dry-cleaning machines*:

- *Part 1: Common safety requirements*
- *Part 2: Machines using perchloroethylene*
- *Part 3: Machines using combustible solvents*

Introduction

This document is a type-C standard as stated in ISO 12100.

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

When requirements of this type-C standard are different from those which are stated in type-A or -B standards, the requirements of this type-C standard take precedence over the requirements of the other standards for machines that have been designed and built according to the requirements of this type-C standard.

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Safety requirements for dry-cleaning machines —

Part 1: Common safety requirements

1 Scope

This part of ISO 8230 specifies common safety requirements for dry-cleaning machines.

It is applicable to dry-cleaning machines of all sizes intended for industrial and commercial use for the cleaning of articles made of textile, leather, furs and skins, using exclusively either perchloroethylene or combustible solvent as the cleaning medium.

It is not applicable to:

- machines placed at the disposal of the general public (self-service);
- barrier machines as defined in 3.1.5;
- transfer machines as defined in 3.1.4;
- ironing presses (see ISO 10472-1 and ISO 10472-2);
- ancillary equipment, e.g. room ventilation equipment, waste recuperation systems of the still, external water cooling systems or external systems for solvent recovery from the still sludge.

This part of ISO 8230 deals with all significant hazards arising from the use of the dry-cleaning machine, where “use of the dry-cleaning machine” comprises both intended use and foreseeable abnormal situations and includes commissioning, use and maintenance. It defines the common safety requirements for dry-cleaning machines and is intended to be used in conjunction with ISO 8230-2 and ISO 8230-3, as relevant. Specific requirements in those other parts of ISO 8230 take precedence over the respective requirements of this part of ISO 8230.

It does not deal with hazards caused by processing items that can create an explosive atmosphere (e.g. printers' wipers containing a low-flash solvent), nor with machines processing loads that can contain “foreign solvents”, which could lead to a change in a property (characteristic) of the cleaning solvent, e.g. cause foaming or make it carcinogenic.

This part of ISO 8230 applies to machines manufactured after the date of its issue.

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.

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

ISO 8230-1:2008(E)

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

ISO 3744:1994¹⁾, *Acoustics — Determination of sound power levels of noise sources using sound pressure — Engineering method in an essentially free field over a reflecting plane*

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

ISO 5232:1998, *Graphical symbols for textile machinery*

ISO 6178:1983, *Centrifuges — Construction and safety rules — Method for the calculation of the tangential stress in the shell of a cylindrical centrifuge rotor*

ISO 8230-2, *Safety requirements for dry-cleaning machines — Part 2: Machines using perchloroethylene*

ISO 8230-3, *Safety requirements for dry-cleaning machines — Part 3: Machines using combustible solvents*

ISO 8232:1988, *Closed-circuit dry-cleaning machines — Defining and checking of machine characteristics*

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

ISO/TR 11688-2:1998, *Acoustics — Recommended practice for the design of low-noise machinery and equipment — Part 2: Introduction to the physics of low-noise design*

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*

ISO 13732-1, *Ergonomics of the thermal environment — Methods for the assessment of human responses to contact with surfaces — Part 1: Hot surfaces*

ISO 13732-3:2005, *Ergonomics of the thermal environment — Methods for the assessment of human responses to contact with surfaces — Part 3: Cold surfaces*

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

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

ISO 13852:1996, *Safety of machinery — Safety distances to prevent danger zones being reached by the upper limbs*

ISO 13855:2002, *Safety of machinery — Positioning of protective equipment with respect to the approach speeds of parts of the human body*

ISO 13856-1:2001, *Safety of machinery — Pressure-sensitive protective devices — Part 1: General principles for design and testing of pressure-sensitive mats and pressure-sensitive floors*

1) Under revision.

- ISO 14119:1998, *Safety of machinery — Interlocking devices associated with guards — Principles for design and selection*
- ISO 14120:2002, *Safety of machinery — Guards — General requirements for the design and construction of fixed and movable guards*
- 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 14122-2:2001, *Safety of machinery — Permanent means of access to machinery — Part 2: Working platforms and walkways*
- ISO 14122-3:2001, *Safety of machinery — Permanent means of access to machinery — Part 3: Stairs, stepladders and guard-rails*
- EN 378-1:2000, *Refrigerating systems and heat pumps — Safety and environmental requirements — Part 1: Basic requirements, definitions, classification and selection criteria*
- EN 378-2:2000, *Refrigerating systems and heat pumps — Safety and environmental requirements — Part 2: Design, construction, testing, marking and documentation*
- EN 614-1:2006, *Safety of machinery — Ergonomic design principles — Part 1: Terminology and general principles*
- EN 981:1996, *Safety of machinery — System of auditory and visual danger and information signals*
- EN 983:1996, *Safety of machinery — Safety requirements for fluid power systems and their components — Pneumatics*
- EN 61310-1:1995, *Safety of machinery — Indication, marking and actuation — Part 1: Requirements for visual, auditory and tactile signals*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 12100-1 and the following apply.

3.1 Machine configuration

3.1.1

dry-cleaning machine

equipment in which articles made of textile, leather, fur or skin are cleaned, treated and dried

NOTE Equipment such as solvent recovery, inerting and distilling equipment can also be part of the dry-cleaning machine.

3.1.2

closed-circuit dry-cleaning machine

dry-cleaning machine in accordance with ISO 8232, in which reduction is carried out without any contact between the air in the drum and the air in the workroom

3.1.3

open-circuit dry-cleaning machine

dry-cleaning machine, in which the deodorization takes place by an intake of fresh air and evacuation of any solvent/air mixture out of the dry-cleaning machine, prior to the opening of the loading/unloading door

3.1.4

transfer machine

equipment where cleaning machine and tumbler are separated and where the load has to be transferred after extraction from the cleaning machine to the tumbler