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**NATIONAL STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA**

GB/T 15706.2-2007

**Safety of machinery -- Basic concepts, general principles for
design -- Part 2: Technical principles
(English Translation)**

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Foreword

GB/T 15706, Safety of machinery - Basic concepts, general principles for design, comprises two parts.

-- Part 1. Basic terminology and methodology;

-- Part 2. Technical principles.

This Part is Part 2 of GB/T 15706.

This part is identical to ISO 12100-2:2003, Safety of machinery - Basic concepts, general principles for design - Part 2. Technical principles; some editorial changes are made in accordance with the rules for drafting standards in China as specified in GB/T 1.1-2000.

This Part replaces GB/T 15706.2-1995, Safety of machinery - Basic concepts, general principles for design - Part 2. Technical principles and specifications.

This Part was proposed by and shall be under the jurisdiction of National Technical Committee 208 on Mechanical Safety of Standardization Administration of China (SAC/TC 208).

The responsible drafting organizations of this Part. China Productivity Center for Machinery of Academy of Machinery Science and Technology.

The contributory drafting organizations of this Part. Nanjing Food Packaging Machinery Institute, Changchun Testing Machine Institute, Jilin Institute of Safety Science and Technology, China Food and Packaging Machinery Corporation, China United Certification Center, Guangdong Jinfangyuan Safety Technology and Testing Co., Ltd.

Introduction

The primary purpose of GB/T 15706 is to provide designers with an overall framework and guidance to enable them to produce machines that are safe for their intended use. It also provides a strategy for standard makers.

The concept of safety of machinery considers the ability of a machine to perform its intended function(s) during its lifecycle where risk has been adequately reduced.

This standard is the basis for a set of standards which has the following structure.

- type-A standards (basic safety standards) giving basic concepts, principles for design, and general aspects that can be applied to all machinery;

- type-B standards (generic safety standards) dealing with one safety aspect or one type of safeguard that can be used across a wide range of machinery.

- nu type-B1 standards on particular safety aspects (e.g. safety distances, surface temperature, noise);

- nu type-B2 standards on safeguards (e.g. two-hand controls, interlocking devices, pressure sensitive devices, guards);

- type-C standards (machine safety standards) dealing with detailed safety requirements for a particular machine or group of machines.

This standard is a type-A standard.

The subject of numerous clauses or subclauses of this standard is also dealt with, in a more detailed manner, in other type-A or B standards.

When a type-C standard deviates from one or more provisions dealt with by Part 2 of this standard or by a type-B standard, the type-C standard takes precedence.

It is recommended that this standard be incorporated in training courses and manuals

to convey basic terminology and general design methods to designers.

Safety of machinery - Basic concepts, general

principles for design - Part 2. Technical principles

1 Scope

This standard defines technical principles to help designers in achieving safety in the design of machinery.

GB/T 15706.2 is intended to be used together with GB/T 15706.1 when considering the solution to a specific problem. The two parts of GB/T 15706 can be used independently of other documents or as a basis for the preparation of other type-A standards or type-B or -C standards.

This standard does not deal with damage to domestic animals, property or the environment.

2 Normative references

The provisions in following documents become the provisions of this Standard through reference in this Part of GB/T 15706. For dated references, the subsequent amendments (excluding corrigendum) or revisions do not apply to this Standard, however, parties who reach an agreement based on this Standard are encouraged to study if the latest versions of these documents are applicable. For undated references, the latest edition of the referenced document applies.

GB 5226.1-2002, Safety of machinery - Electrical equipment of machines - Part

1 General requirements (IEC 60204-1.2000, IDT)

GB/T 15706.1-2007, Safety of machinery - Basic concepts general principles for design - Part 1. Basic terminology and methodology (ISO 12100-1.2003, IDT)

3 Terms and definitions

For the purposes of this document, the following terms and definitions given in GB/T 15706.1-2007 apply.

Bibliography

[1] CR 1030-1, Hand-arm vibration - Guidelines for vibration hazards reduction - Part

1 Engineering methods by design of machinery

[2] EN 614-1, Safety of machinery - Ergonomic design principles - Part 1. Terminology and general principles

[3] EN 894-3, Safety of machinery - Ergonomics requirements for the design of displays and control actuators - Part 3. Control actuators

[4] EN 1299, Mechanical vibration and shock - Vibration isolation of machines - Information for the application of source isolation

[5] EN 12198-1, Safety of machinery - Assessment and reduction of risks arising from radiation emitted by machinery - Part 1. General principles

[6] 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

[7] EN 13861, Safety of machinery - Guidance for the application of ergonomics standards in the design of machinery

[8] EN 50020, Electrical apparatus for potentially explosive atmospheres - Intrinsic safety 'i'

[9] EN 61029, Safety of transportable motor-operated electric tools

[10] GB 5226, Safety of machinery - Electrical equipment of machines (GB 5226.1-2002, IEC 60204-1.2000, IDT; GB 5226.2-2002, IEC 60204-32.1998, IDT; GB 5226.3-2005, IEC 60204-11.2000, IDT; GB 5226.4-2005, IEC 60204-31.2001, IDT)

[11] GB 4706.1, Household and similar electrical appliances - Safety - Part 1. General requirements (GB 4706.1-2005, IEC 60335-1.2004(Ed 4.1), IDT)

[12] GB 3883, Hand-held motor operated tools - Safety - Part 1. General requirements (GB 3883-2005, IEC 60745-2.2003, IDT)

[13] GB 14048.5-2001, Low-voltage switchgear and controlgear - Part 5-1. Control circuit devices and switching elements - Electromechanical control circuit devices (eqv IEC 60947-5-1.1997)