MALAYSIAN STANDARD

MS ISO 13856-2:2017

Safety of machinery - Pressure-sensitive protective devices - Part 2: General principles for design and testing of pressure-sensitive edges and pressure-sensitive bars (First revision) (ISO 13856-2:2013, IDT)

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ICS: 13.110

Descriptors: safety of machinery, pressure-sensitive protective devices, general principles, edges, bars

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DEPARTMENT OF STANDARDS MALAYSIA

DEVELOPMENT OF MALAYSIAN STANDARDS

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Malaysian Standards (MS) are developed through consensus by committees which comprise balanced representation of producers, users, consumers and others with relevant interests, as may be appropriate to the subject at hand. To the greatest extent possible, Malaysian Standards are aligned to or are adoption of international standards. Approval of a standard as a Malaysian Standard is governed by the Standards of Malaysia Act 1996 [Act 549]. Malaysian Standards are reviewed periodically. The use of Malaysian Standards is voluntary except in so far as they are made mandatory by regulatory authorities by means of regulations, local by-laws or any other similar ways.

For the purposes of Malaysian Standards, the following definitions apply:

Revision: A process where existing Malaysian Standard is reviewed and updated which resulted in the publication of a new edition of the Malaysian Standard.

Confirmed MS: A Malaysian Standard that has been reviewed by the responsible committee and confirmed that its contents are current.

Amendment: A process where a provision(s) of existing Malaysian Standard is altered. The changes are indicated in an amendment page which is incorporated into the existing Malaysian Standard. Amendments can be of technical and/or editorial nature.

Technical corrigendum: A corrected reprint of the current edition which is issued to correct either a technical error or ambiguity in a Malaysian Standard inadvertently introduced either in drafting or in printing and which could lead to incorrect or unsafe application of the publication.

NOTE: Technical corrigenda are not to correct errors which can be assumed to have no consequences in the application of the MS, for example minor printing errors.

STANDARDS MALAYSIA has appointed **SIRIM Berhad** as the agent to develop, distribute and sell Malaysian Standards.

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Committee representation

The Industry Standards Committee on Occupational Safety and Health (ISC W) under whose authority this Malaysian Standard was adopted, comprises representatives from the following organisations:

Business Council for Sustainability and Responsibility Malaysia
Chemical Industries Council of Malaysia
Construction Industry Development Board Malaysia
Department of Agriculture
Department of Chemistry, Malaysia
Department of Environment
Department of Occupational Safety and Health Malaysia
Department of Standards Malaysia
Federation of Malaysian Manufacturers
Jabatan Bomba dan Penyelamat Malaysia
Lloyd's Register Technical Services Sdn Bhd
Malaysian Employers Federation
Malaysian Industrial Hygiene Association
Malaysian International Chamber of Commerce and Industry
Malaysian Nuclear Agency
Malaysian Society for Occupational Safety and Health
Malaysian Trades Union Congress
Minerals and Geoscience Department Malaysia
Ministry of Health Malaysia
Ministry of International Trade and Industry
National Institute of Occupational Safety and Health
SIRIM Berhad (Secretariat)
SIRIM QAS International Sdn Bhd
SME Corporation Malaysia
Suruhanjaya Tenaga
The Institution of Engineers, Malaysia
Universiti Kebangsaan Malaysia

The Technical Committee on Safety of Machinery which recommended the adoption of the ISO Standard as Malaysian Standard consists of representatives from the following organisations:

Department of Occupational Safety and Health Malaysia
Federation of Malaysian Manufacturers
Malaysian Employers Federation
Malaysian Industrial Hygiene Association
Malaysian Society for Occupational Safety and Health
Malaysian Trades Union Congress
National Institute of Occupational Safety and Health
SIRIM Berhad (Secretariat)
The Institution of Engineers, Malaysia
Universiti Malaysia Kelantan

Co-opted members:

Global Institute of Safety Management Sdn Bhd
Master Jaya Environmental Sdn Bhd

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National foreword

The adoption of the ISO Standard as a Malaysian Standard was recommended by the Technical Committee on Safety of Machinery under the authority of the Industry Standards Committee on Occupational Safety and Health.

This Malaysian Standard is identical with ISO 13856-2:2013, *Safety of machinery - Pressure-sensitive protective devices - Part 2: General principles for design and testing of pressure-sensitive edges and pressure-sensitive bars*, published by the International Organization for Standardization (ISO). However, for the purposes of this Malaysian Standard, the following apply:

a) in the source text, "this International Standard" should read "this Malaysian Standard";

b) the comma which is used as a decimal sign (if any), to read as a point; and

c) reference to International Standards should be replaced by corresponding Malaysian Standards as follows:

Referenced International Standards	Corresponding Malaysian Standards
ISO 12100, *Safety of machinery - General principles for design - Risk assessment and risk reduction*	MS ISO 12100, *Safety of machinery - General principles for design - Risk assessment and risk reduction*
ISO 13849-1, *Safety of machinery - Safety-related parts of control systems - Part 1: General principles for design*	MS ISO 13849-1, *Safety of machinery - Safety-related parts of control systems - Part 1: General principles for design*
ISO 13849-2, *Safety of machinery - Safety-related parts of control systems - Part 2: Validation*	MS ISO 13849-2, *Safety of machinery - Safety-related parts of control systems - Part 2: Validation*
IEC 60068-2-6, *Environmental testing - Part 2-6: Test - Test Fc: Vibration (sinusoidal)*	MS IEC 60068-2-6, *Environmental testing - Part 2-6: Test - Test Fc: Vibration (sinusoidal)*
IEC 60068-2-14, *Environmental testing - Part 2-14: Test - Test N: Change of temperature*	MS IEC 60068-2-14, *Environmental testing - Part 2-14: Test - Test N: Change of temperature*
IEC 60068-2-27, *Environmental testing - Part 2-27: Test - Test Ea and guidance: Shock*	MS IEC 60068-2-27, *Environmental testing - Part 2-27: Test - Test Ea and guidance: Shock*
IEC 60068-2-78, *Environmental testing - Part 2-78: Test - Test Cab: Damp heat, steady state*	MS IEC 60068-2-78, *Environmental testing - Part 2-78: Test - Test Cab: Damp heat, steady state*
IEC 60204-1:2005, *Safety of machinery - Electrical equipment of machines - Part 1: General requirements*	MS IEC 60204-1:2008, *Safety of machinery - Electrical equipment of machines - Part 1: General requirements*

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National foreword *(continued)*

Referenced International Standards	Corresponding Malaysian Standards
IEC 60529, *Degree of protection provided by enclosures (IP code)*	MS IEC 60529, *Degree of protection provided by enclosures (IP code)*
IEC 60664-1, *Insulation coordination for equipment within low-voltage systems - Part 1: Principles, requirements and tests*	MS IEC 60664-1, *Insulation coordination for equipment within low-voltage systems - Part 1: Principles, requirements and tests*
IEC 60947-5-1: 2003, *Low-volatage switchgear and controlgear - Part 5-1: Control circuit devices and switching elements - Electromechanical control circuit devices*	MS IEC 60947-5-1: 2005, *Low-volatage switchgear and controlgear - Part 5-1: Control circuit devices and switching elements - Electromechanical control circuit devices*
IEC 61000-4-2, *Electromagnetic compatibility (EMC) - Part 4-2: Testing and measuring techniques - Electrostatic discharge immunity test*	MS IEC 61000-4-2, *Electromagnetic compatibility (EMC) - Part 4-2: Testing and measuring techniques - Electrostatic discharge immunity test*
IEC 61000-4-3, *Electromagnetic compatibility (EMC) - Part 4-3: Testing and measuring techniques - Radiated, radio-frequency, electromagnetic field immunity test*	MS IEC 61000-4-3, *Electromagnetic compatibility (EMC) - Part 4-3: Testing and measuring techniques - Radiated, radio-frequency, electromagnetic field immunity test*
IEC 61000-4-4, *Electromagnetic compatibility (EMC) - Part 4-4: Testing and measuring techniques - Electrical, fast transient/burst immunity test*	MS IEC 61000-4-4, *Electromagnetic compatibility (EMC) - Part 4-4: Testing and measuring techniques - Electrical, fast transient/burst immunity test*
IEC 61000-4-5, *Electromagnetic compatibility (EMC) - Part 4-5: Testing and measuring techniques - Surge immunity test*	MS IEC 61000-4-5, *Electromagnetic compatibility (EMC) - Part 4-5: Testing and measuring techniques - Surge immunity test*
IEC 61000-4-6, *Electromagnetic compatibility (EMC) - Part 4-6: Testing and measuring techniques - Immunity to conducted disturbances, induced by radio-frequency fields*	MS IEC 61000-4-6, *Electromagnetic compatibility (EMC) - Part 4-6: Testing and measuring techniques - Immunity to conducted disturbances, induced by radio-frequency fields*
IEC 61000-6-2, *Electromagnetic compatibility (EMC) - Part 6-2: Generic standards - Immunity for industrial environments*	MS IEC 61000-6-2, *Electromagnetic compatibility (EMC) - Part 6-2: Generic standards - Immunity for industrial environments*

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National foreword *(concluded)*

This Malaysian Standard cancels and replaces MS ISO 13856-2:2006, *Safety of machinery - pressure-sensitive protective devices - Part 2: General principles for the design and testing of pressure-sensitive edges and pressure-sensitive bars.*

Compliance with a Malaysian Standard does not of itself confer immunity from legal obligations.

NOTE. IDT on the front cover indicates an identical standard i.e. a standard where the technical content, structure, and wording (or is an identical translation) of a Malaysian Standard is exactly the same as in an International Standard or is identical in technical content and structure although it may contain the minimal editorial changes specified in clause 4.2 of ISO/IEC Guide 21-1.

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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 13856-2 was prepared by Technical Committee ISO/TC 199, *Safety of machinery* and by Technical Committee CEN/TC 114, *Safety of machinery* in collaboration.

This second edition cancels and replaces the first edition (ISO 13856-2:2005), which has been technically revised.

ISO 13856 consists of the following parts, under the general title *Safety of machinery — Pressure-sensitive protective devices*:

— *Part 1: General principles for design and testing of pressure-sensitive mats and pressure-sensitive floors*

— *Part 2: General principles for design and testing of pressure-sensitive edges and pressure-sensitive bars*

— Part 3: *General principles for design and testing of pressure-sensitive bumpers, plates, wires and similar devices*

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