



# MALAYSIAN STANDARD

MS ISO 286-1:2011

**Geometrical product specifications (GPS) -  
ISO code system for tolerances on linear  
sizes - Part 1: Basis of tolerances, deviations  
and fits  
(ISO 286-1:2010, IDT)**

**ICS: 17.040.10**

Descriptors: geometrical product specification (GPS), tolerance, deviation, fit, linear size, cylinder, terminology, basic hole, basic shaft

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## Committee representation

The Industry Standards Committee on Mechanical Engineering (ISC F) under whose authority this Malaysian Standard was adopted, comprises representatives from the following organisations:

Department of Occupational Safety and Health Malaysia  
Department of Standards Malaysia  
Jabatan Kerja Raya Malaysia  
Machinery and Equipment Manufacturers' Association  
Malaysian Industrial Development Authority  
Malaysian Iron and Steel Industry Federation  
Ministry of International Trade and Industry  
National Institute of Occupational Safety and Health  
PETROLIAM NASIONAL BERHAD  
Science and Technology Research Institute for Defence  
SIRIM Berhad (Secretariat)  
SIRIM QAS International Sdn Bhd  
Suruhanjaya Perkhidmatan Air Negara  
Suruhanjaya Tenaga  
The Institution of Engineers, Malaysia  
Universiti Kebangsaan Malaysia  
Universiti Malaya  
Universiti Sains Malaysia  
Universiti Teknologi Malaysia

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

Association of Consulting Engineers Malaysia  
Construction Industry Development Board Malaysia  
Institut Kemahiran MARA Alor Setar  
Jabatan Kerja Raya Malaysia  
Machinery and Equipment Manufacturers' Association  
Malaysia Mould and Die Association  
Master Builders Association Malaysia  
Pertubuhan Akitek Malaysia  
SIRIM Berhad (Advanced Polymer and Composites Programme)  
SIRIM Berhad (Secretariat)  
The Institution of Engineers, Malaysia  
Universiti Industri Selangor  
Universiti Teknologi Malaysia

## NATIONAL FOREWORD

The adoption of the ISO Standard as a Malaysian Standard was recommended by the Technical Committee on Technical Drawings under the authority of the Industry Standards Committee on Mechanical Engineering.

This Malaysian Standard is identical with ISO 286-1:2010, *Geometrical product specifications (GPS) - ISO code system for tolerances on linear sizes - Part 1: Basis of tolerances, deviations and fits*, 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 286-2, *Geometrical product specifications (GPS) - ISO code system for tolerances on linear sizes - Part 2: Tables of standard tolerance grades and limit deviations for holes and shafts*

MS ISO 286-2, *Geometrical product specifications (GPS) - ISO code system for tolerances on linear sizes - Part 2: Tables of standard tolerance grades and limit deviations for holes and shafts*

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.

## 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 286-1 was prepared by Technical Committee ISO/TC 213, *Dimensional and geometrical product specifications and verification*.

This second edition of ISO 286-1 cancels and replaces ISO 286-1:1988 and ISO 1829:1975, which have been technically revised.

ISO 286 consists of the following parts, under the general title *Geometrical product specifications (GPS) — ISO code system for tolerances on linear sizes*:

- *Part 1: Basis of tolerances, deviations and fits*
- *Part 2: Tables of standard tolerance grades and limit deviations for holes and shafts*