ASME Y14.24-2020
(Revision of ASME Y14.24-2012)

Types and Applications of Engineering Drawings

Engineering Product Definition and Related Documentation Practices

AN AMERICAN NATIONAL STANDARD

The American Society of Mechanical Engineers

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Two Park Avenue • New York, NY • 10016 USA

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This Standard will be revised when the Society approves the issuance of a new edition.

Periodically certain actions of the ASME Y14 Committee may be published as Cases. Cases are published on the ASME website under the Y14 Committee Page at http://go.asme.org/Y14committee as they are issued.

Errata to codes and standards may be posted on the ASME website under the Committee Pages to provide corrections to incorrectly published items, or to correct typographical or grammatical errors in codes and standards. Such errata shall be used on the date posted.

The Y14 Committee Page can be found at http://go.asme.org/Y14committee. There is an option available to automatically receive an e-mail notification when errata are posted to a particular code or standard. This option can be found on the appropriate Committee Page after selecting "Errata" in the "Publication Information" section.

The American Society of Mechanical Engineers
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FOREWORD

The American Society for Mechanical Engineers (ASME) Committee Y14, Standards for Product Definition and Related Documentation Practices, formed Subcommittee 24, Types and Application of Engineering Drawings, in June 1973. The purpose was to prepare a standard defining accepted drawing types used to establish engineering requirements in the production and procurement of hardware.

The Subcommittee used Chapter 200 of the military standard MIL-STD-100, Engineering Drawing Practices (now cancelled), as a basis. They considered the types of engineering drawings most frequently used by business, industry, and government in the United States in their effort to serve the needs of these communities and assure consistency of application and interpretation.

A series of meetings were held to identify, select, and prepare proposed text and illustrations. At each stage, the Subcommittee considered which requirements were best suited for a national standard. Members of the Y14.24 Subcommittee represented a cross section of American industry and the Department of Defense (DoD). Liaison with specialized societies such as the National Defense Industrial Association (NDIA), Aerospace Industries Association (AIA), Electronic Industries Association (EIA) [now defunct; the standards brand is continued under the Electronic Components Industry Association (ECIA)], and the Society of Automotive Engineers (SAE) provided additional technical support.

Drawing definitions are intended to permit preparation by any suitable method (manual, computer-aided, photographic, etc.); therefore, preparation techniques and methods of reproduction are not described.

The original edition of ASME Y14.24M was approved as an American National Standard by the American National Standards Institute (ANSI) on November 3, 1989. It was adopted and approved for use by the DoD on March 30, 1990. It was reaffirmed in 1996 without change.

Upon its release, the original edition of Y14.24M was referenced by the DoD as a replacement for the majority of Chapter 200 of MIL-STD-100E (released September 30, 1991). However, input from users of the DoD standard indicated that additional detail and clarification were needed to ensure understanding and application of the requirements when this Standard is invoked on government contracts.

Subcommittee 24 was reformed and began work on revising the Standard at a meeting in Garland, Texas held October 8 through 10, 1991. ASME Y14.24 was approved by ANSI as an American National Standard on June 24, 1999. It was reaffirmed in 2004 without change and published as ASME Y14.24-2012 on April 5, 2013. Work for the current revision was started in November 2012.

The following is a summary of the significant changes incorporated in this revision:

(a) general drawing information was moved to its own clause
(b) layout drawings were moved toward the end of the standard
(c) definitions were added for the following:
  (1) altered item drawing (AID)
  (2) drawing graphic sheet
  (3) enterprise identifier (EID)
  (4) envelope drawing
  (5) NATO Commercial and Government Entity (NCAGE) Code
  (6) procurement specification
  (7) selected item drawing (SID)
  (8) source control drawing (SOCD)
  (9) vendor item control drawing (VICD)
(d) the requirements for source control drawings were listed so users are no longer referred to other paragraphs
(e) procurement control drawing types were moved to Nonmandatory Appendix B
(f) source blocks for VICDs and SOCDs were revised
(g) software item identification drawing type was introduced
(h) new figures were added for the following:
  (1) monodetail 3D model annotation
  (2) exploded view assembly drawing
  (3) inseparable assembly 3D model annotation
  (4) software item identification drawing (SIDD)

(i) figures for the following were revised:

(1) monodetail drawing

(2) installation drawing

(3) modification drawing

(4) software item installation drawing (SIND), formerly called software installation drawing

(j) remaining figures were updated

Commendation is extended to the companies and DoD departments and agencies that sponsored participants in this activity and to those whose earlier efforts provided the basis for this Standard. The success of this Standard can be attributed to their demonstrated interest, cooperation, and support.

Coordination of this Standard with the International Organization for Standardization (ISO/TC10/SC1) is intended to help enhance world understanding of the various types of drawings in use within the United States.

ASME Y14.24-2020 was approved by ANSI as an American National Standard on July 20, 2020.

ASME Y14 COMMITTEE
Engineering Product Definition and Related Documentation Practices

(The following is the roster of the Committee at the time of approval of this Standard.)

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CORRESPONDENCE WITH THE Y14 COMMITTEE

General. ASME Standards are developed and maintained with the intent to represent the consensus of concerned interests. As such, users of this Standard may interact with the Committee by requesting interpretations, proposing revisions or a case, and attending Committee meetings. Correspondence should be addressed to:

Secretary, Y14 Standards Committee
The American Society of Mechanical Engineers
Two Park Avenue
New York, NY 10016-5990
http://go.asme.org/Inquiry

Proposing Revisions. Revisions are made periodically to the Standard to incorporate changes that appear necessary or desirable, as demonstrated by the experience gained from the application of the Standard. Approved revisions will be published periodically.

The Committee welcomes proposals for revisions to this Standard. Such proposals should be as specific as possible, citing the paragraph number(s), the proposed wording, and a detailed description of the reasons for the proposal, including any pertinent documentation.

Proposing a Case. Cases may be issued to provide alternative rules when justified, to permit early implementation of an approved revision when the need is urgent, or to provide rules not covered by existing provisions. Cases are effective immediately upon ASME approval and shall be posted on the ASME Committee web page.

Requests for Cases shall provide a Statement of Need and Background Information. The request should identify the Standard and the paragraph, figure, or table number(s), and be written as a Question and Reply in the same format as existing Cases. Requests for Cases should also indicate the applicable edition(s) of the Standard to which the proposed Case applies.

Attending Committee Meetings. The Y14 Standards Committee regularly holds meetings and/or telephone conferences that are open to the public. Persons wishing to attend any meeting and/or telephone conference should contact the Secretary of the Y14 Standards Committee. Future Committee meeting dates and locations can be found on the Committee Page at http://go.asme.org/Y14committee.

TYPES AND APPLICATIONS OF ENGINEERING DRAWINGS

1 GENERAL

1.1 Scope

This Standard defines the types of engineering drawings most frequently used to establish engineering requirements. It describes typical applications and minimum content requirements. Drawings for specialized engineering disciplines (e.g., marine, civil, construction, optics, etc.) are not included in this Standard. It is essential that this Standard be used in close conjunction with ASME Y14.34, ASME Y14.35, ASME Y14.41, and ASME Y14.100.

1.2 ASME Y14 Series Conventions

The conventions in paras. 1.2.1 through 1.2.9 are used in this and other ASME Y14 standards.

1.2.1 Mandatory, Recommended, Guidance, and Optional Words

(a) The word "shall" establishes a requirement.

(b) The word "will" establishes a declaration of purpose on the part of the design activity.

(c) The word "should" establishes a recommended practice.

(d) The word "may" establishes an allowed practice.

(e) The words "typical," "example," and "for reference" and the Latin abbreviation "e.g." indicate suggestions given for guidance only.

(f) The word "or" used in conjunction with a requirement or a recommended practice indicates that there are two or more options for complying with the stated requirement or practice.

(g) The phrase "unless otherwise specified" or UOS shall be used to indicate a default requirement. The phrase is used when the default is a generally applied requirement and an exception may be provided by another document or requirement.

1.2.2 Cross-Reference of Standards. Cross-reference of standards in text with or without a date following the standard designator shall be interpreted as follows:

(a) Reference to other ASME Y14 Standards in the text without a date following the standard designator indicates the issue of the standard identified in the References section shall be used to meet the requirement.

(b) Reference to other ASME Y14 Standards in the text with a date following the standard designator indicates that only that issue of the standard shall be used to meet the requirement.

1.2.3 Invocation of Reference Standards. The following examples define the invocation of a standard when specified in the References section and referenced in the text of the Y14 Standard:

(a) When a referenced standard is cited in the text with no limitations to a specific subject or paragraph(s) of the standard, the entire standard is invoked. For example, "dimensioning and tolerancing shall be in accordance with ASME Y14.5" is invoking the complete standard because the subject of the standard is dimensioning and tolerancing and no specific subject or paragraph(s) within the standard is invoked.

(b) When a referenced standard is cited in the text with limitations to a specific subject or paragraph(s) of the standard, only the paragraph(s) on that subject is invoked. For example, "assign part or identifying numbers in accordance with ASME Y14.100" is invoking only the paragraph(s) on part or identifying numbers because the subject of the standard is engineering drawing practices and part or identifying numbers is a specific subject within the standard.

(c) When a referenced standard is cited in the text without an invoking statement such as "in accordance with," the standard is invoked for guidance only. For example, "for gaging principles, see ASME Y14.43" is only for guidance and no portion of the standard is invoked.

1.2.4 Parenthesis Following a Definition. When a definition is followed by a standard referenced in parentheses, the standard referenced in parentheses is the source for the definition.

1.2.5 Notes. Notes depicted in the Y14 Standard in ALL UPPERCASE letters are intended to reflect actual drawing entries. Notes depicted in Initial Uppercase or lowercase letters are to be considered supporting data to the contents of the standard and are not intended for literal entry on drawings. A statement requiring the addition of a note with the qualifier "such as" is a requirement to add a note, and the content of the text is allowed to vary to suit the application.

1.2.6 Acronyms or Abbreviations. Acronyms and abbreviations are spelled out the first time used in Y14 Standards, followed by the acronym or abbreviation in parenthesis. The acronym is used thereafter throughout the text.