ASME Y14.41-2012
[Revision of ASME Y14.41-2003 (R2008)]

Digital Product Definition Data Practices

Engineering Drawing and Related Documentation Practices

AN AMERICAN NATIONAL STANDARD

The American Society of Mechanical Engineers

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ASME Y14.41, Product Definition Data Practices — Digital, was adopted on 7 July 2003 for use by the Department of Defense, (DoD). Proposed changes by DoD activities must be submitted to the DoD Adopting Activity: Commander, U.S. Army ARDEC, ATTN: RDAR-QES-E, Picatinny Arsenal, NJ 07806-5000. Copies of this document may be purchased from The American Society of Mechanical Engineers (ASME), 22 Law Drive, PO Box 2900, Fairfield, NJ 07007-2900; http://www.asme.org.

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The American Society of Mechanical Engineers
Three Park Avenue • New York, NY • 10016 USA

Date of Issuance: May 14, 2012

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

Periodically certain aspects of the ASME Y14 Committee may be published as Cases. Cases are published on the ASME Web site under the Committee Pages at http://cstools.asme.org/ as they are published.

Errata to codes and standards may be posted on the ASME Web site 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 Committee Pages can be found at http://cstools.asme.org/. 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
Three Park Avenue, New York, NY 10016-5990

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FOREWORD

The development of this Standard was initiated at the request of industry and the government. A meeting was held to determine the interest in this subject in January 1997 in Wichita, Kansas, hosted by The Boeing Company in their facility. A subsequent meeting was held during the spring ASME meeting in 1997 to enlist membership of those who would be interested in working this project.

The Chairs of the different Y14 standards have been collaborating to improve the coordination of the Y14 standards. To this end, in this revision of ASME Y14.41 material regarding Saved Views is being move to ASME Y14.3. This material is retained in this publication of ASME Y14.41 in Mandatory Appendix I as a baseline until such time as ASME Y14.3 is published. This Appendix will be removed at a later revision of ASME Y14.41. Information on unequally or unilaterally disposed profile tolerances has been removed from this standard since this information is now included in ASME Y14.5-2009.

The material in the standard was reorganized to locate all of the information on a topic together in the text. This allows the reader to find all of the requirements for a functional area in one location.

A definition of data set classifications was developed to describe the combinations of model and drawing graphics sheets that might be required by a customer. This material is being included in ASME Y14.100 as it has broader applicability than is appropriate for ASME Y14.41.

Suggestions for improvement of this Standard are welcome. They should be sent to The American Society of Mechanical Engineers; Attn: Secretary, Y14 Standards Committee; Three Park Avenue; New York, NY 10016-5990.

This edition was approved as an American National Standard on February 17, 2012.

ASME Y14 COMMITTEE
Engineering Drawing and Related Documentation Practices

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

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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, and attending Committee meetings. Correspondence should be addressed to:

Secretary, Y14 Standards Committee
The American Society of Mechanical Engineers
Three 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 for the purpose of providing 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, 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 or telephone conferences, which are open to the public. Persons wishing to attend any meeting or telephone conference should contact the Secretary of the Y14 Standards Committee or check our Web site at http://cstools.asme.org/csconnect/CommitteePages.cfm?Committee=C64000000.

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DIGITAL PRODUCT DEFINITION DATA PRACTICES

Section 1
General

1.1 SCOPE

This Standard establishes requirements and references documents applicable to the preparation and revision of digital product definition data, hereafter referred to as data sets. This Standard defines exceptions and additional requirements to existing ASME standards for using product definition digital data sets or drawing graphic sheet in digital format, hereafter referred to as drawing graphic sheet. When no exception or additional requirements are stated, existing ASME standards shall apply.

It is essential that this Standard be used in close conjunction with ASME Y14.24, ASME Y14.34, ASME Y14.35M, and ASME Y14.100. In addition, classification codes as defined in ASME Y14.100 may apply for data sets that include a combination of a model and drawing graphics sheet.

1.2 STRUCTURE OF STANDARD

This Standard supports two methods of preparing a data set: model only, and model and drawing graphic sheet. The structure starts with the requirements common to both methods, and then branches to the other sections that have differing requirements for each method. In addition, it provides a guide for the many computer aided design (CAD) software packages to develop better modeling and annotation practices for CAD and engineering disciplines.

1.3 ASME Y14 SERIES CONVENTIONS

The conventions in paras. 1.3.1 through 1.3.10 are guidance used in this and other ASME Y14 Series of standards.

1.3.1 Mandatory, Nonmandatory, Guidance, and Optional Words

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

(b) The word "will" establishes an intended, mandatory requirement.

(c) The words "should" and "may" establish a nonmandatory practice.

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

(e) When the text of this Standard has an "or" statement it indicates that there are two or more options on how to comply with the stated requirement.

1.3.2 Cross-Reference of Standards. Cross-reference of standards in text with or without a date following the standard identity is interpreted as follows:

(a) reference to other ASME Y14 Series of standards in the text without a date following the Standard identity indicates the issue of the standard as identified in the References section (section 2) shall be used to meet the requirement

(b) reference to other ASME Y14 Series of standards in the text with a date following the standard identity indicates that only that issue of the standard shall be used to meet the requirement

1.3.3 Invocation of Referenced Standards. The following examples define the invocation of a standard when specified in the References section (section 2) and referenced in the text of this Standard:

(a) When the text states "dimensioning and tolerancing shall be in accordance with ASME Y14.5-2009," with no limitations to a specific subject or area of the Standard, the entire text of ASME Y14.5-2009 is invoked.

(b) When the text states "assign part or identifying numbers in accordance with ASME Y14.100-2004," only the paragraph requirements on Part or Identifying Number assignment in ASME Y14.100-2004 are invoked.

(c) When the text states "for gaging principles see ASME Y14.43," the text provides a cross-reference of where to find guidance for dimensioning and tolerancing for gages and fixtures, and no portion of ASME Y14.43 is invoked.

1.3.4 Parentheses Following a Definition. When a definition is followed by a standard referenced in parentheses, the standard referenced in parentheses is the controlling standard for the definition.

1.3.5 Notes. Notes depicted in this Standard in ALL UPPERCASE letters are intended to reflect actual