ASME Y14.8-2022
[Revision of ASME Y14.8-2009 (R2014)]

Castings, Forgings, and Molded Parts

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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The American Society of Mechanical Engineers
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FOREWORD

This is a revision of ASME Y14.8-2009 (R2014), Castings, Forgings, and Molded Parts. Based on guidance from the ASME Y14 Committee, the material formerly in Section 1 has been reorganized into Sections 1 through 3, and the subsequent Sections have been renumbered. The scope of the Standard has expanded to include full feature concepts as a result of draft. Changes to both the text and figures have been made to better illustrate drafting practices pertaining to drawings of cast, forged, and molded parts.

Figures for plus draft, minus draft, and draft included have been improved. A new symbol for full feature has been created, and figures have been added to show application of the full feature symbol. Customized datum references are shown to demonstrate control of specific degrees of freedom due to process variations, such as mismatch and die closure. The effect of applying profile of a surface with datum references to surfaces containing datum targets is continued for the increased use of form tolerancing in model-based computer-aided design (CAD) systems. Text and figures have been revised to reflect these changes.

The successful revision of this Standard is attributed to the commitment of the committee members and the support of their sponsoring companies. Their time commitment and their contributed expertise are gratefully acknowledged. Don E. Day, former chair of the ASME Y14.8 Subcommittee, is acknowledged for his tireless leadership, commitment, and knowledge, which have made this revision possible.

This Standard was approved by the American National Standards Institute as an American National Standard on March 17, 2022.

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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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 proposing revisions or a case and attending Committee meetings. Correspondence should be addressed to:

Secretary, Y14 Standards Committee
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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.

Section 1
Scope

This Standard covers definitions of terms and features unique to casting, forging, and molded-part technologies with recommendations for their uniform specification on engineering drawings and related documents. Castings, forgings, and molded parts are delineated as "part" or "parts" throughout the Standard.

1.1 GENERAL

Unless otherwise specified, any reference to features, parts, or processes shall be interpreted as applying to castings, forgings, and molded parts. Sections 2 through 5 establish related references, definitions, drawing presentation methods, and drafted feature considerations. Datum referencing is presented in Section 6, and Section 7 provides drawing notes and drawing items. Additional information unique to castings, forgings, and moldings is located in Nonmandatory Appendices A through C. The information in Nonmandatory Appendix D is provided to assist in the interpretation of existing drawings on which practices in previous editions of ASME Y14.8 may appear.

1.2 DIMENSIONING AND TOLERANCING

The methods of dimensioning and tolerancing shall be in accordance with ASME Y14.5 and this Standard.

1.3 ASME Y14 SERIES CONVENTIONS

The conventions in paras. 1.3.1 through 1.3.12 are used in this and other ASME Y14 standards.

1.3.1 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," "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 the abbreviation "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.

1.3.2 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 edition of the standard identified in the References section (Section 2) 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 edition 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 Section 2 and referenced in the text of this Standard:

(a) When a referenced standard is cited in the text with no limitations to a specific subject or paragraphs 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 paragraphs within the standard are invoked.

(b) When a referenced standard is cited in the text with limitations to a specific subject or paragraphs of the standard, only the paragraphs on that subject are invoked. For example, "Assign part or identifying numbers in accordance with ASME Y14.100" is invoking only the paragraphs 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.