DRAFT

Default Standards for Understanding Engineering Documentation with Incomplete Reference to Applicable Dimensioning, Tolerancing, Surface Texture, and Metrology Standards

Product Definition Specification (PDS)

TENTATIVE
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ASME Standards and Certification
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1 Editions of Y14, B46.1 and B89 Documents for Determining the Relevant Standard
Foreword

Engineering product definition data often function as contract documents. This standard addresses the situation where no standards are listed on an engineering document, which may cause contract or legal issues.

When engineering product definition data is produced, regardless of the country it was produced in it must be based on a set of standards or it is not interpretable. ASME recommends that product definition data should have its applicable standards stated in the product definition data, in a document referenced in the product definition data or in contractual imposed documents. The standards may be company, regional, national, or international standards.

Where the applicable engineering product definition standards, surface texture standards or measurement standards are not indicated by one of these methods, the interpretation of the engineering product definition data and the measurement methods are unspecified. Unfortunately, there are many drawing graphic sheets or models in industry that do not have any indication as to which standards are to be used for interpretation.

The purpose of this ASME standard is to identify the set of dimensioning, tolerancing, surface texture, and measurement standards as de facto standards to apply to engineering documentation where no standards are indicated in the product definition data or in a document referenced in the product definition data, or in contractual imposed documents.

ASME has three Committees that produce standards that affect product specification, interpretation, and measurement practices. They are:

- B46 Committee on Classification and Designation of Surface Qualities
- B89 Committee on Dimensional Metrology
- Y14 Committee on Engineering Product Definition and Related Documentation Practices

These three ASME Standards Committees have jointly prepared and individually approved this revision to define the applicable dimensioning and tolerancing standards, surface texture standards, and associated measurement standards when no reference is made to a company, regional, national, or international standard in product definition data. The Special Committee H213 on Harmonization of Dimensional and Geometrical Product Specifications and Verification was instrumental in initiating this document.

This Standard was approved as an American National Standard on xxxxxx
CORRESPONDENCE WITH THE H213 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 proposing revisions and attending Committee meetings. Correspondence should be addressed to:

Secretary, H213 Standards Committee
The American Society of Mechanical Engineers
Two Park Avenue
New York, NY 10016-5990
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. This Standard is always open for comment, and the committee welcomes proposals for revisions. 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 H213 Special 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 H213 Special Committee or check the ASME Web site at http://cstools.asme.org.
1 SCOPE.¹
This standard defines the applicable dimensioning and tolerancing standards, surface texture standards, and associated measurement standards when no reference is made to a company, regional, national, or international standard on dimensioning and tolerancing product definition data. This standard applies to product definition data created in any country.

2 Product Definition Specifications
ASME Product Definition Specifications (PDS) are a harmonized set of standards used to document and interpret engineering and verification by inspection (e.g. using surface or dimensional metrology) requirements. PDS standards are jointly developed and approved by the B46, B89, and Y14 committees. PDS standards may invoke partial or entire ASME B46, B89, and Y14 standards.

3 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,” or 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.

4 Reference to the Y14.5 Standard
Paragraph 1.4 of USASI-1966; paragraph 5.1.4 of ANSI Y14.5-1973; paragraph 1.1.2 of ANSI Y14.5M-1982; paragraph 1.1.3 of ASME Y14.5M-1994; ASME Y14.5-2009 and paragraph 1.3 of ASME Y14.5-2018 state that the relevant standard shall be referenced in the product definition data, in a document referenced in the product definition data, or contractual imposed documents to avoid misinterpretation.

¹ See the Foreword for information on the reason for this standard.
5 Product Definition Data Without Reference to a Standard
When product definition data is produced without a reference to a standard (company, regional, national, or international), or contractual imposed documents and contains symbology from an USASI, ANSI, or ASME standard on dimensioning and tolerancing, it shall be interpreted according to the approved USASI, ANSI, or ASME standard that existed at the approval date in the product definition data. See Non-Mandatory Appendix Table A1 for a list of applicable Y14, B46 and B89 standards. If product definition data was established the same year as a standard, the standard in existence the year prior to the approval date in the product definition data may be applicable. An exception to this requirement is when engineering documentation contains symbology unique to a specific edition of a standard shown in Table A1. In this case, it shall be interpreted according to the specific edition where different than the edition in existence at the approval date in the product definition data.

6 ANSI/ASME B46 and B89 Standards
The reference to an USASI / ANSI / ASME Y14.5 Dimensioning and Tolerancing standard also invokes any applicable ASA / ANSI / ASME B46 standards on Surface Texture and applicable ANSI / ASME B89 standards. Unless otherwise specified in the product definition data, in a document referenced in the product definition data, or in a company measurement plan, the standard that existed at the date when the product definition data was first approved shall be applicable. Non-Mandatory Appendix Table A1 provides information to aid in determining when a standard was approved.
Nonmandatory Appendix A
Relevant Standard Determination Information

A.1 RELEVANT STANDARD
The relevant standard shall be referenced in the product definition data, in a document referenced in the product definition data, or contractual imposed documents to avoid misinterpretation. If the relevant standard is not referenced, the relevant standard shall be the standard that existed at the approval date in the product definition data. Table A1 provides additional information to aid in the determination of the relevant standard. The standard date of issuance should be confirmed before determining the relevant standard.
<table>
<thead>
<tr>
<th>The Year the drawing graphic sheet or model was approved?</th>
<th>Engineering Product Definition</th>
<th>Surface Metrology</th>
<th>Dimensional Metrology</th>
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<tr>
<td>1972</td>
<td>Y14.5-1966</td>
<td>B46.1 - 1962</td>
<td>B89.3.1 - 1972</td>
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<td>Y14.5 - 1994</td>
<td>Y14.36 - 1996</td>
<td>B89.3.1 - 1995(^1)</td>
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<td>Y14.36 - 1996</td>
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<td>Y14.36 - 1996</td>
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<td>Y14.36 - 2018</td>
<td>B89.3.1 - 2019</td>
</tr>
<tr>
<td>2019</td>
<td>Y14.5 - 2018</td>
<td>Y14.36 - 2018</td>
<td>B89.3.1 - 2019</td>
</tr>
</tbody>
</table>

**GENERAL NOTE:** The documents listed in this Table were published by The American Society of Mechanical Engineers (ASME), Two Park Avenue, New York, NY 10016; Order Department: 22 Law Drive, P.O. Box 2900, Fairfield, NJ 07007-2900.

1. Cutoff wavelengths or frequencies, must be specified in product definition data created or revised after December 14, 1996, 6 months after the 1995 revision of this Standard was published. (ASME B46.1-2019 4-4.2) (also -1995, -2002, -2009)

2. The ASME B89.7.3.1 standard is invoked only if product definition data, created in 2001 or later, includes decision rule terminology and no reference is made to other explanatory information.

The ASME B89.7.5 document is invoked only if product definition data, created in 2006 or later, specifies metrological traceability terminology and no reference is made to other explanatory information.