ASME Y14.5.2-2017
(Revision of ASME Y14.5.2-2000)

Certification of Geometric Dimensioning and Tolerancing Professionals

Engineering Product Definition and Related Documentation Practices

The American Society of Mechanical Engineers

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The American Society of Mechanical Engineers
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.

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The American Society of Mechanical Engineers
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FOREWORD

The American Society of Mechanical Engineers (ASME), recognizing the needs and benefits associated with standard qualifications for professionals using the ASME Y14.5 Standard, established the Y14.5.2 Subcommittee on Certification in October 1988. The Subcommittee was instructed to develop a standard that could be used as the basis of an ASME Program for Certification of Geometric Dimensioning and Tolerancing Professionals (GDTP). This program provides the means to ensure proficiency in the understanding and application of the geometric dimensioning and tolerancing principles expressed in ASME Y14.5. Those principles form an essential element of engineering language.

This is a voluntary standard that sets forth the qualifications for two levels of certification. The first level, Technologist GDTP, provides a measure of an individual's ability to understand drawings that have been prepared using the language of geometric dimensioning and tolerancing, as defined in the ASME Y14.5 Standard. The second level, Senior GDTP, provides the additional measure of an individual's ability to select and apply geometric controls to drawings.

Primary changes to this revision are higher percentages of questions per section to increase the application's emphasis on geometric dimensioning and tolerancing and to revise the criteria for passing the examination.

The original Standard was approved by the Board on Standardization on April 26, 1995. This revised Standard was approved by the Board on Standardization on May 18, 2017.

IN MEMORIAM: In memory of Don Day for his significant contributions to the development of this Standard and to the geometric dimensioning and tolerancing community.

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
The American Society of Mechanical Engineers
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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.

CERTIFICATION OF GEOMETRIC DIMENSIONING AND TOLERANCING PROFESSIONALS

1 INTRODUCTION

1.1 Scope

This Standard establishes certification requirements for a geometric dimensioning and tolerancing professional (GDTP). Certification shall be based on either ASME Y14.5M-1994 or ASME Y14.5-2009, its appendices, and the application of its principles and concepts.

1.2 Purpose

This Standard provides requirements and qualifications to be used in certifying a GDTP. These requirements and qualifications recognize the knowledge, training, and experience necessary to understand, apply, and teach the principles as set forth in ASME Y14.5M-1994 or ASME Y14.5-2009. A GDTP may be employed as, but is not limited to

(a) design engineer
(b) production or manufacturing engineer
(c) process engineer
(d) quality engineer
(e) tool or gage engineer
(f) engineering manager
(g) user or programmer of CAD, CAM, CAE, or other software
(h) drafter
(i) checker
(j) engineering consultant
(k) educator
(l) inspector
(m) contract engineer
(n) project engineer
(o) technical specialist

2 CERTIFICATION LEVELS AND QUALIFICATIONS

2.1 Certification Levels

There shall be two levels of GDTP certification:
(a) Technologist
(b) Senior
Certification indicates that the individual has demonstrated competence in the areas described in para. 2.1.1, 2.1.2, 2.1.3, or 2.1.4.

2.1.1 Technologist Level (ASME Y14.5M-1994 Examination). Certification indicates that the individual has demonstrated an understanding of the meaning of the symbols, modifiers, and relationships of geometric dimensioning and tolerancing (GD&T) as applied to engineering drawings and related documentation that conform to ASME Y14.5M-1994.

2.1.2 Technologist Level (ASME Y14.5-2009 Examination). Certification indicates that the individual has demonstrated competencies in reading and interpreting an engineering drawing that conforms to ASME Y14.5-2009. These include, but are not limited to, the following:
(a) understanding the rules, definitions, principles, and meanings of the symbols and modifiers of GD&T as applied to engineering drawings and related documentation
(b) understanding the functions and relationships of part features and geometric controls
(c) performing calculations associated with GD&T derived from the drawing and related documentation
(d) understanding that the application of GD&T has implications for manufacturing, quality control, and verification processes associated with engineering drawings and related documentation
(e) applying the principles of GD&T to the establishment of functional gaging activities

2.1.3 Senior Level (ASME Y14.5M-1994 Examination). Certification indicates that the individual has demonstrated competencies in application of the rules and principles required to generate an engineering drawing that conforms to ASME Y14.5M-1994. These include, but are not limited to, the following:
(a) understanding the meaning of the symbols, modifiers, and relationships of GD&T as applied to engineering drawings and related documentation that conform to ASME Y14.5M-1994
(b) making the proper selection, with consideration for the function and relationship of part features, of geometric controls to document the product design intent
(c) applying the appropriate geometric control symbols, modifiers, and datum references to the engineering drawings and related documentation
(d) applying the principles of GD&T to the operations of manufacturing, quality control, and verification processes associated with engineering drawings and related documentation
(e) applying the principles of GD&T to the establishment of functional gaging activities

2.1.4 Senior Level (ASME Y14.5-2009 Examination). Certification indicates that the individual has demonstrated competencies in the application of the rules and principles required to generate an engineering