

ASME Standards Related to Product Definition and Metrology

The following is a reference list of American National Standards and ISO Standards that are related to geometric tolerancing, product definition, metrology and verification. These are some of the most common standards. Standards are in constant flux and change periodically. For more detailed information on current available standards contact:

The American Society of Mechanical Engineers (ASME) www.ASME.Org

ISO Standards www.ds.dk/isotc213/

ASME Reference Standards

ASME Y14.5.1M-1994 (R2004), Mathematical Definition of Dimensioning and Tolerancing Principles

ASME Y14.5.2-2000 Certification of Geometric Dimensioning and Tolerancing Professionals

ASME Y14.41 - 2003 (R2008) Digital Product Definition Data Practices

ASME Y14.43 - 2003, (R2008) Dimensioning and Tolerancing Principles for Gages and Fixtures

ASME Y14.8-2009, Castings and Forgings

ANSI B4.2-1978 (R2004), Preferred Metric Limits and Fit

ANSI B4.1-1967 Preferred Limits and Fits for Cylindrical Parts

ASME Y13.38M-2007, Abbreviations

ASME Y14.100-2004, Engineering Drawing Practices

ASME Y14.3M-1994 (R2008), Multiview and Sectional View Drawings

ASME Y14.1M-2005, Drawing Sheet Size and Format

ASME Y14.2M-2008, Line Conventions and Lettering

ANSI/IEEE 268-1992,2 Metric Practice

IEEE/ASTM SI 10-2002 ERRATA 2005, Standard for Use of the International System of Units (SI) — The Modern Metric System

ASME B5.10-1994, Machine Tapers — Self Holding and Steep Taper Series

ASME B46.1-200, Surface Texture, Surface Roughness, Waviness, and Lay

ASME Y14.36M-1996, Surface Texture Symbols

ANSI B89.3.1-1972 (R2003), Measurement of Out-of-Roundness

ANSI B92.1-1996,1 Involute Splines and Inspection, Inch Version

ANSI B92.2M-1980,1 Metric Module, Involute Splines

ASME B94.11M-1993, Twist Drills

ANSI Y14.6-2001 (R2007), Screw Thread Representation

ANSI Y14.6aM-1981 (R1998), Screw Thread Representation (Metric Supplement)

ANSI Y14.7.1-1971 (R1998), Gear Drawing Standards — Part 1: For Spur, Helical, Double Helical, and Rack

ANSI Y14.7.2-1978 (R1999), Gear and Spline Dwg Standards - Pt 2: Bevel and Hypoid Gears

ANSI/ASME B1.2-1983, Gages and Gaging for Unified Inch Screw Threads

ANSI B4.4M-1981 (R1987), Inspection of Workpieces

ASME B89.7.2-1999 Dimensional Measurement Planning

ASME B89.7.3.1-2001 Guidelines for Decision Rules: Considering Measurements Uncertainty in Determining Conformance to Specifications

ANSI/ASME B89.6.2-1973 (R2003), Temperature and Humidity Environment for Dimensional Measurement

ANSI/ASME B94.6-1984 (R2003), Knurling

ISO Standards Related to Product Definition and Metrology

ISO Reference Standards

ISO 1101-2004 Geometrical Product Specifications (GPS) — Geometrical tolerancing — Tolerances of form, orientation, location and run-out

ISO 1-1975, Standard reference temperature for industrial length measurements

ISO 286 Part 1, 1998, ISO system of limits and fits -Bases of tolerances, deviations and fits

ISO 286 -Part 2, 2006, ISO system of limits and fits — Tables of standard tolerance grades and limit deviations for holes and shafts

ISO 1660:1987, Technical drawings — Dimensioning and tolerancing of profiles

ISO R 1938-1971, ISO system of limits and fits, Part II : Inspection of plain workpieces

ISO 2692:—1), Geometrical Product Specification (GPS) — Geometrical tolerancing — Maximum Material Requirement (MMR) and Least Material Requirement (LMR)

ISO 2768-Part1 & 2, 1989, General tolerances -Tolerances for linear and angular dimensions without individual tolerance indications

ISO 5458:1998, Geometrical Product Specifications (GPS) — Geometrical tolerancing — Positional tolerancing

ISO 5459:1981, Technical drawings — Geometrical tolerancing — Datums and datum-systems for geometrical tolerances specifications, operators and uncertainties

ISO ISO/TR 5460-1985 Technical drawings - Geometrical tolerancing -Tolerancing of form, orientation, location and run-out Verification principles and methods – Guidelines

ISO 8015:1985, Technical drawings — Fundamental tolerancing principle

ISO 10578:1992, Technical drawings — Tolerancing of orientation and location — Projected tolerance zone

ISO 10579:1993, Technical drawings — Dimensioning and tolerancing — Non-rigid parts

ISO/TS 12180-1:2003, Geometrical Product Specifications (GPS) — Cylindricity — Part 1: Vocabulary and parameters of cylindrical form

ISO/TS 12180-2:2003, Geometrical Product Specifications (GPS) — Cylindricity — Part 2: Specification operators

ISO/TS 12181-1:2003, Geometrical Product Specifications (GPS) — Roundness — Part 1: Vocabulary and parameters of roundness

ISO/TS 12181-2:2003, Geometrical Product Specifications (GPS) — Roundness — Part 2: Specification operators

ISO/TS 12780-1:2003, Geometrical Product Specifications (GPS) — Straightness — Part 1: Vocabulary and parameters of straightness

ISO/TS 12780-2:2003, Geometrical Product Specifications (GPS) — Straightness — Part 2: Specification operators

ISO/TS 12781-1:2003, Geometrical Product Specifications (GPS) — Flatness — Part 1: Vocabulary and parameters of flatness

ISO/TS 12781-2:2003, Geometrical Product Specifications (GPS) — Flatness — Part 2: Specification operators

ISO 14660-1:1999, Geometrical Product Specifications (GPS) — Geometrical features — Part 1: General terms and definitions

ISO 14660-2:1999, Geometrical Product Specifications (GPS) — Geometrical features — Part 2: Extracted median line of a cylinder, cone, extracted median surface, extracted local size feature

ISO/TS 17450-2:2002, Geometrical product specifications (GPS) — General concepts — Part 2: Basic tenets, specifications, operators and uncertainties