10/13/16 AC

ASTM Style Manual

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1. EDITORIAL STYLE

1.1 ASTM Committees

ASTM committees should be cited as ASTM Committee D02 on Petroleum Products and Lubricants. Subsequent references can be cited as Committee D02. No space or dashes should be included. The format is D02, C17, etc.

1.2 Abbreviations and Unit Symbols

- In the text, use unit symbols after numbers denoting a definite quantity. Example: "The tensile strength is 45,000 psi (310 MPa)." Use unit symbols in tables and figures; in lists defining symbols used in equations; use unit symbols and abbreviations in the singular only. Thus "fifty kilograms" shall be designated "50 kg," not "50 kgs." Exceptions: Figs., Nos., Eqs, Refs., Vols.
- When a long word or phrase for which there is no standard abbreviation is used frequently, it may be replaced by an abbreviation that is explained when it first occurs. Examples: below top dead center (btdc), relative centrifugal force (rcf).
- Commonly accepted abbreviations for names of societies, associations, government agencies, etc., may be used, provided the name is spelled out the first time it is used. Use no periods and run together. Examples: ASTM International, TAPPI, NASA, ARPA.
- The standard unit symbols and abbreviations for use in Society publications in **Appendix A** are so common that they may be used without explanation. For proper form and style for SI units see IEEE/ASTM SI-10 Standard for Use of the International System of Units (SI): The Modern Metric System.

1.3 Affiliations

Use superscript Arabic numerals to denote affiliations. Do not use professional titles, such as Director, Professor, Dean, Senior Scientist, etc. Do not include punctuation at the end of affiliations. Example:

John Smith[1] and Sarah Adams[2,3]
[1]Department of Mechanical Engineering, United States Naval Academy, 590 Holloway Rd., Annapolis, MD 21402
[2]CanmetMATERIALS, 183 Longwood Rd. South, Hamilton, ON L8P 0A5, Canada
[3]ASTM International, 100 Barr Harbor Dr., West Conshohocken, PA 19428

1.4 Alloy Designations

Use the following for alloy designations:
3135 steel
2024-T4 aluminum
Ti-4Al–3V-Mo
Ti-6Al-4V
0.5Ti molybdenum alloy or molybdenum with 0.5 % titanium or
0.5Ti alloy (where molybdenum is understood)
ASTM and SAE have jointly developed a unified numbering system (UNS) for alloy identification (Practice E527).

1.5 And/Or

Do not use this expression. For example, when "A and/or B" is truly the case, write "A or B, or both." When "A, B, and/or C" is truly the case, write "A, B, or C, or combinations thereof."

1.6 Capitalization

- Use capitals sparingly, but when in doubt, capitalize.
- Use initial cap:
    - For "committee" where used in a title, as "Committee A01" or "Committee on Publications."
    - When referring to volumes, figures, tables, etc. (Vol. 2, Fig. 2, Table 2). Use lowercase in less direct references such as: "This volume contains ¼" or "In the same figure is shown ¼".

    - In such expressions as: Test 1, Specimen A, Cement B, Type 1, Class C, Grade B, etc.
    - For Society, Staff, and Headquarters when referring to ASTM International, its Staff, and its Headquarters.
- Capitalize trademarks. The initial cap becomes lowercase after the word is accepted into the language as generic. It is permissible to use all caps in directions such as: "Turn the machine to OFF position" or "Turn the dial to TITRATE."
- In headings and titles, capitalize all nouns, pronouns, verbs, adjectives, adverbs, and all other words of five or more letters. Do not use initial caps on abbreviations, or the phrase "et al.," or in the word "to" in the infinitive form of a verb.
- The following are now lowercase: babbitt, bunsen, cellophane, diesel, kraft, neoprene, nylon, Portland cement, saran.
- Use lowercase everywhere else, as "The committee recommends ¼" This rule also applies to use of "symposium," etc.

1.7 Chemical Formulas
Chemical formulas should be used freely in tables and figures. In text in which chemical formulas are mentioned infrequently, spell out the names. Where they are mentioned frequently, spell out the name in the first reference to it, followed by the formula in parentheses. The formula alone may be used subsequently. Do not use chemical formulas for organic or complex inorganic compounds. Always spell out the word "water" and the name of the elements (use lead, not Pb). Isotopes may be written as carbon-14 or as 14C.

1.8 Chemical Symbols
Spell out chemical compounds the first time they appear in the text and include the formula in parentheses, e.g., hydrochloric acid (HCl); use only the symbol thereafter. Spell out individual chemical elements. In figures and tables, use symbols freely for compounds and elements.

1.9 Commas
Use serial commas in lists with three or more items: Test 1, Specimen A, Cement B, and Type 1.

1.10 Crystal Planes and Directions
Use the following symbols for crystallographic planes and directions:
plane (111)
family of planes {111}
direction [111]
family of directions <111>

1.11 Dates
When there is no date, spell out the month. Examples: Jan. 15, 1995, and January 1995.
For journals, the “Published online” date will be the date articles are sent to First Look.

1.12 Dictionaries and Other Reference Publications on Style
For spelling, punctuation, capitalization, and foreign words, use *Merriam-Webster's Collegiate Dictionary*. For words that do not appear in that dictionary, use *Webster's Third New International Dictionary*. For other information on style use *Manual of Style*, The University of Chicago Press.

1.13 Dilution Ratio
Use the form "9+1" rather than "9:1" for dilution ratios. This means that the 1 part solute is to be mixed with the 9 parts solvent. Specify whether volumes or weights are being used, for example, volume/volume, weight/volume, etc.

1.14 Documenting Experiment Procedures
When testing is performed to obtain supportive data for papers or articles, authors shall prepare a summary of the procedures, and where appropriate, options followed, such that readers can understand how the testing was performed. This may include a schematic or written summary of steps followed.

1.15 Figures
Figures, whether line drawings, photographs, or graphs, should be used to demonstrate some point or observation. It is the author's responsibility to provide original, reproducible figures of professional quality. See http://art.cadmus.com/da/guidelines.jsp for more detailed information.

In-text references should appear as “Fig. 2a”. In figure files and in figure captions, use “(a)”, “(b)”, etc., to note parts of a figure.

1.16 Footnotes
For footnotes in tables, use superscript lowercase, roman letters, beginning with a for each table. The footnotes should appear below the table.

For all other footnotes appearing in the text of the paper, use superscript numbers. The number scheme should pick up from the author affiliation footnotes. For example, if on the first page there are 2 author affiliation footnotes (1 and 2), any footnotes on the following pages should pick up with number 3.
Do not use footnotes in figure captions. Either cite a previous footnote or reference (for example, "see Footnote 3," or "taken from Ref. [4]"), or write out the reference in the caption.

1.17 Hyphens
- Hyphenate compound adjectives, such as: "50-mm gage," "low-alloy steel," and "cold-drawn wire." Write expressions such as the following *with* the hyphen after the first word: "high- and low-temperature tests." Where numerals are involved, omit all but the last hyphen, as in "50, 100, and 150-mm specimens." For the sake of appearance, omit hyphens in such expressions as "3 % nickel alloy" or "3°C rise in temperature." Also do not hyphenate chemical compounds and the words "stainless steel" and "cast iron."
- Do not hyphenate an adverb-adjective combination when the adverb ends with "*ly*."
- Spelled-out fractions used as nouns are *not* hyphenated (one third of the load); however, when used as adjectives, they *are* hyphenated (a one-third share).

1.18 Italics
Italicize:
- All symbols for physical quantities that can have a numerical value (quantity symbols).
- *Chemistry*—*N* (normal), *M* (molar), c (concentration). Do not italicize symbols for the elements (Fe, N, Na, etc.) Exception: italicize *N* for nitrogen when it is used to denote position, as in *N*-methylaniline. Italicize *o*, *m*, and *p* as ortho, meta, and para; for example, *p*-cresol. Italicize and abbreviate secondary and tertiary as *sec* and *tert*; for example, *tert*-butyl alcohol. Italicize *iso* when used in *iso*octane.
- *Titles*—Italicize titles of books, including ASTM books, such as *Annual Book of ASTM Standards* and *ASTM STP 1439*.
- *Foreign Words*—Use *Merriam-Webster's Collegiate Dictionary* as a guide to foreign words.
- *Transistor Type*—Use *n*-*p*-*n*, *p*-*n*-*p*, *n*-type, etc.

Do not italicize:
- Letters used to subdivide a categorical classification, such as Method A, Cement B, Class C, Grade D, Type E, Sample F.
- *Metallurgy*—A1 point, Ar1, etc.
- *Abbreviations*—pH, sin, cos, tan, log, d (for derivative).

1.19 Mathematical Material

Equations—should be numbered throughout the text with the number appearing on the right of the equation. The format for a numbered equation is:

$$L_p = C_t / R \qquad (1)$$

where:

S = stress, psi or Pa,

M = bending moment, lbf·in. or N···m,

c = distance from neutral axis to outermost fiber, in. or m, and

I = second moment of area, in.4 or m4.

Exp versus e—If the exponent is relatively short and on one line, without superscripts or subscripts, use e:

$e^{(a-b)cx}$

If it is relatively long or has superscripts or subscripts, use exp:

$\exp[x^2/2 - 1n(x/a)]$

Fractions—Use the solidus (diagonal line) in the text:

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Use the built-up fraction (with a horizontal line) in an equation. If you use a built-up fraction on one side of an equation, use it on the other side:

$$\frac{dp}{dy} = \frac{k_z}{b} - fp \qquad (2)$$

Use parentheses liberally to clearly show the complete numerator or denominator. For example, does log *a/b* mean log (*a/b*) or (log *a*)/*b*? Use the parentheses to clarify. If you write *a/b + c* but mean *a/*(*b* + *c*), use parentheses.

For in text callouts, use “Eq 1” or “Eqs 2 and 3 ” (no periods).

1.20 Nomenclature

Place the nomenclature section at the beginning of the manuscript, after the keywords and before the Introduction.

1.21 Numerals and Numbering

- Use Arabic numbers throughout. Spell out the number for multiple-number expressions, e.g., fifteen 2-cm rods. Place a zero before a decimal point, e.g., 0.65. Use commas for numbers containing more than three digits, e.g., 12,365.
- Spell out all numbers from one through twelve, with the following exceptions:
    - Use numerals when the quantity is partly fractional, as: 1.15, 1½.
    - Use numerals when followed by an expression having a standard unit symbol, as: 5 mm, 9 %.
- If for any reason the standard abbreviation or unit symbol of the expression following the number is not used, or if the expression does not admit of abbreviation (as *year*, *ton*, etc.), the use of numerals is optional, unless covered in the following paragraphs:
- In statements containing two or more numbers, one of which is greater than twelve, express all numbers as numerals, such as "2 tests and 16 weighings."
- In a series of connected numerical statements implying precision, use numerals, as "5 months, 3 days."
- Use numerals after abbreviations, as: Vol 26, Fig. 2.
- Use numerals for all numbers exceeding twelve, with the following exceptions:

- Do not begin a sentence with a numeral. When the numeral is spelled out, also spell out the unit following, as "One gram is usually sufficient."
- Spell out round numbers used in an indefinite sense, such as, "*a hundred* metres or so."

1.22 Percent versus Percentage Points
When a quantity is reduced from 40 to 30, it is reduced by 25 %. When a quantity decreases from 40 % to 30 %, it decreases by 10 *percentage points*. Use the forms "mass percent," "volume percent," "atom percent," etc.

1.23 Polymers
Where the name of the monomer is one word, the prefix "poly" is simply run in, as: polystyrene, polyisobutylene, etc. Where the name of the monomer is two words, they are enclosed in parentheses and the prefix "poly" added, as in the following words: poly(vinyl chloride), poly(methyl methacrylate).

1.24 Sample versus Specimen
In general, the word "sample" should be used only to describe a piece or quantity of bulk material that has been selected by some sampling process. Pieces or quantities taken from the sample for testing are called "specimens." Quantities of liquid or bulk aggregate are usually called "samples," because a sampling procedure is usually used to obtain them.
To describe the piece on which a test is made, use "specimen" or "test specimen," not "piece" or "sample."

1.25 SI Units
SI units shall be included in all ASTM publications in accordance with the latest edition of SI-10.

1.26 Subheads
Manuscripts should be organized with as many subdivisions (subheads) as necessary to ensure readability.

First Level Headings
Flush left and upper lower case (first letter of each word it cap)

SECOND LEVEL HEADINGS
Flush left, italicized, all caps

Third Level Subheads
Bold, upper lower case (first letter of each word it cap)

1.27 Symbols
In general, avoid the use of symbols in text. When stating dimensions, use "by" not x, for example, "10 by 5 in. (254 by 127 mm)." Show tolerances, for example, as 10 by 5 ± 2 in. (254 by 127 ± 6 mm)." Do not use (') or (") for feet and inches in text, tables, or figures. In combination with words not having symbols, spell out entirely, for example, "bubbles per minute."

1.28 Tables
- Number each table with an Arabic numeral and give it a title that is complete and descriptive.
  In column headings, first include the quantity being tabulated, then a comma, then the units, for example:
- "Tensile Strength, min, psi."
- *Powers of 10*—do not use powers of 10 in the column heading, since it is not clear whether the numbers in the table have been or are to be multiplied by the power of ten. Instead, indicate the multiplication (for example, 1.45×10^6) in the first entry in the table; or use an expression such as "Young's Modulus, millions of psi" in the column heading.

- *Footnotes*—See info under **Footnotes** section.
  Use horizontal rules under column headings. Use vertical rules only when the complexity of the table demands them for clarity. Use leaders (three periods) in any space that represents a blank entry.
- *Notes*—Additional information can be included in a note that appears below the title.
  When two (or more) separate systems of units are both listed in one table (for example, inch-pound and SI units), provide SI units in separate columns or in parentheses or brackets.
- When the size of a table and limitations of space (on the printed page) make it impractical to expand the table to include SI unit equivalents, duplicate the table.
- When it is impractical to include two or more units of measurement in the column heading because of the size and the number of tables, include the pertinent conversion factors as footnotes under each table instead of attempting to include the actual converted values within the tables.

1.29 Tension/Compression/Flexure Tests
The words "tension," "compression," and "flexure" are used adjectivally to modify "specimen," "test," or "testing." Examples: tension test, compression testing, flexure specimen. To modify other nouns, the adjectives "tensile," "compressive," and "flexural" are used. Examples: tensile strength, compressive force, flexural data. In some areas (notably the textile industry) there is a difference between a "tension test" and a "tensile test," and in these cases the appropriate terminology shall be used.

1.30 Thermal Conductivity
The form to be used for the unit for thermal conductivity *k* is: Btu?ft/(h?ft^2?°F) [SI units: W/(m?K)].

1.31 Thermometers
Whenever possible, refer to thermometers described in ASTM Specification E 1, for ASTM Thermometers. Reference to an ASTM thermometer of the desired range should be as follows:

> Thermometer—ASTM (name) Thermometer having a range from ___ to ___ (°C or °F, whichever applies) and conforming to the requirements for Thermometer (give thermometer number; for example, 16F) as prescribed in Specification E 1.

Do not specify both temperature scales unless there is a definite need for them.

1.32 Trademarks
Avoid the use of trademarks whenever possible. For example, use aluminum oxide instead of Aloxite, petroleum jelly instead of Vaseline. When trademarks are used, they should, of course, be initial cap.
Aloxite (trademark, use aluminum oxide)
Alundum (trademark)
Bakelite (trademark)
Carborundum (trademark)
Celite (trademark)
Chromel-Alumel (trademark)
Haydite (trademark)
Inconel (trademark)
Invar (trademark)
Kel-F (trademark, use polychlorotrifluoroethylene)
LAPONITE (trademark)
Lucite (trademark, use poly(methyl methacrylate) (PMMA))
Magne-Gage (trademark)Masonite (trademark)
Monel metal (trademark)
Muntz metal (trademark)
Mylar (trademark, use polyester film)
Nichrome (trademark)

Nujol (trademark, use light mineral oil)
Plexiglas (trademark, use poly(methyl methacrylate) (PMMA))
Pyrex (trademark, use borosilicate)
Scotch tape (trademark, use pressure-sensitive tape)
Teflon (trademark, use TFE-fluorocarbon or polytetrafluoroethylene (PTFE))
Thiokol (trademark, use as an adjective, as "Thiokol polysulfide rubber")
Transite (trademark)
Tygon (trademark, use vinyl)
Vaseline (trademark, use petroleum jelly)
Vycor (trademark, use high-silica)

2. REFERENCES

ASTM books and STPs, the *Journal of Testing and Evaluation*, *Advances in Civil Engineering Materials*, and *Materials and Performance Characterization* use numerical style references only.

Preparing In Text Citations

- Cite the references in the text in numeric order, using online numerals in brackets, e.g. [1] or [1, 3, 5,] or [3–8]. References should be listed in the order of their citation at the end of the paper.
- If mentioning author names in the text, use "et al." for four or more authors. Examples: Smith [1], Smith and Jones [6], Smith, Jones, and Adams [11], Richards et al. [24]

Preparing the Reference List

- All references must contain complete information to allow a reader to find the cited materials and indexing services to include our publications in their indexes.
- Use italics for titles of books or journals.
- Web site references must contain the title of the site, the URL, and the date you viewed the site. Also include the author, the date the information on the site was written or posted, and any other pertinent information that will help the reader find the reference.
- To add DOIs to any reference type, insert a comma at the end of the reference instead of a period, and insert the DOI as "http://dx.doi.org/XXX" without a period at the end.

Examples:

2.1 Book Reference

For ASTM STPs:

[26] Carlson, E. J. Stringfellow, R. G., and Hall, S. C., "Finite Element Modeling of Ground Level Potential Measurements of Galvanic Cells on Concrete Pipe," *Techniques to Assess the Corrosion Activity of Steel Reinforced Structures, ASTM STP1276*, N. Berke, E. Escalante, C. Nmai, and D. Whiting, Eds., ASTM International, West Conshohocken, PA, 1996, p. 74, http://dx.doi.org/10.1520/STP16968S

For Other Books:

[21] Faulkner, R. J., "Liquefied Petroleum Gas," Fuels and Lubricants Handbook: Technology, Properties, Performance, and Testing, ASTM International, West Conshohocken, PA, 2003, pp. 31–32, http://dx.doi.org/10.1520/MNL10717M

[17] Nye, J. F., *Physical Properties of Crystals*, Clarendon Press, Oxford, 1972, p. 131.

2.2 Proceedings Reference (published)

[1] Davies, C. M., Mueller, F., Nikbin, K., O'Dowd, N. P., and Webster, G. A., "Analysis of Creep Crack Initiation and Growth in Different Geometrics for 316H and Carbon Manganese Steels," presented at the *Fifth International ASTM/ESIS Symposium on Fatigue and Fracture Mechanics*, Reno, NV, May 5–6, 2005, ASTM International, West Conshohocken, PA, pp. 1–15, http://dx.doi.org/XXX

Proceedings Reference (unpublished)

[1] Davies, C. M., Mueller, F., Nikbin, K., O'Dowd, N. P., and Webster, G. A., "Analysis of Creep Crack Initiation and Growth in Different Geometrics for 316H and Carbon Manganese Steels," presented at the *Fifth International ASTM/ESIS Symposium on Fatigue and Fracture Mechanics*, Reno, NV, May 5–6, 2005, ASTM International, West Conshohocken, PA—unpublished.

2.3 Journal Reference (published)

[7] Zhang, J. M., Xu, K. W., and Guelorget, B., "Effect of Loading Schemes on Depth-Sensing Indentation Tests," *J. Test. Eval.*, Vol. 32, No. 4, 2004, pp. 504–507, http://dx.doi.org/10.1520/JTE11967

Journal Reference (in review)
[7] Zhang, J. M., Xu, K. W., and Guelorget, B., "Effect of Loading Schemes on Depth-Sensing Indentation Tests," *J. Test. Eval.* (in review).

Journal Reference (in press)
[7] Zhang, J. M., Xu, K. W., and Guelorget, B., "Effect of Loading Schemes on Depth-Sensing Indentation Tests," *J. Test. Eval.* (in press).

2.4 Patent Reference
[4] Williams, D. 2005. Screw less clip mounted computer drive. U.S. Patent 6,885,550, filed August 24, 2000, and issued April 26, 2005.

2.5 Standards Reference
NOTE: In the e-publication, any mention of an ASTM standard in the correct format (ASTM A252-XXXX) will be linked to the latest version of the standard in the ASTM Standards and Engineering Digital Library (SEDL) so the reader can view the Significance and Use and Scope sections and purchase the standard if they wish. Subscribers to the SEDL will be linked to the complete standard.

Citing Standards in Text: When referencing an ASTM or other SDO standard for the first time, include the standard number and the standard title, with the standard title in italics. Example: "...this was the case according to ASTM A252-10 or ASTM A252, *Standard Specification for Welded and Seamless Steel Pipe Piles*." Subsequent references to the same standard would be "A252". If the year date is important, please include it (e.g., ASTM A252-10); the copyeditors will not research the latest year or include it if you have not done so.

In the manuscript's reference section, the Standard should be given as follows:
[1]. ASTM A252-10e1, *Standard Specification for Welded and Seamless Steel Pipe Piles*, ASTM International, West Conshohocken, PA, 2010, www.astm.org

Standards are frequently updated so be sure to check the ASTM website to cite the latest version. For example:

a. ASTM A36/A36M-12
b. ASTM A1234-13a
c. ASTM A3456-13a(2014)
d. ASTM A3-07a(2013)e1

2.6 Discussion
Mehdizadeh, A., Disfani, M. M., Evans, R., Arulrajah, A., and Ong, D. E. L., "Discussion of 'Development of an Internal Camera-Based Volume Determination System for Triaxial Testing' by S. E. Salazar, A. Barnes, and R. A. Coffman. The Technical Note Was Published in Geotechnical Testing Journal, Vol. 38, No. 4, 2015. [DOI: 10.1520/GTJ20140249]," Geotechnical Testing Journal, Vol. 39, No. 1, 2016, pp. 165–168, http://dx.doi.org/10.1520/GTJ20150153. ISSN 0149-6115

2.7 Using Websites as References/Archiving Websites
Archiving websites enables researchers to view the website that authors viewed as it was on the day and at the time that they viewed it. This is especially helpful for mitigating the effects of "link rot", or websites that have become permanently unavailable. All URLs that appear in the reference list should be archived on or as close to the day that the author viewed it.

If an author ask, to archive a website, they should copy the URL, go to www.web.archive.org, and paste the URL into the box in the lower right corner that says "Save Page Now". They will then receive a new URL that includes the archive (date of access) information; for example: http://web.archive.org/web/20161012191111/http://apps.npr.org/best-books-2015/. This is the URL that must be included in the reference list, along with the day, month, and year of access.

For this website, the reference that would be included in the reference list is:

Cohen, N., Friedman, R., Mayer, P., and Novey, B., "NPR's Book Concierge: Our Guide To 2015's Great Reads," NPR, 2015, http://web.archive.org/web/20161012191111/http://apps.npr.org/best-books-2015/ (accessed 12 Oct. 2016).

APPENDIX A: ABBREVIATIONS AND UNIT SYMBOLS

absolute	abs
academic degrees	use periods and run together (M.S., Ph.D., etc.)
alternating current	ac
American	Am. (In footnotes and references only)
American wire gage	AWG
ampere	A
ampere hour	Ah
angstrom	A
ante meridian	a.m.
Association	Assn. (At end of name only)
atmosphere	atm
average	avg
barrel	bbl
becquerel	Bq
billion electronvolts	(use GeV, gigaectronvolts)
Birmingham wire gage	BWG
brake horsepower	bhp
brake-horsepower hour	bhp×h
Brinell hardness number	HB (see ASTM E10)
British thermal unit	Btu
Brown and Sharpe (gage)	B&S
bushel	Bu
calorie	cal
candela	cd
centimetre	cm
centipoise	cP
centistokes	cSt
Circular mil	cmil
Company	Co. (At end of name only)
Corporation	Corp. (At end of name only)
coulomb	C
cubic	use exponential form c
cubic centimetre	cm^3
cubic decimetre	dm^3
curie	Ci
cycles per minute	cpm
cycles per second	(use Hz, hertz)
day	*spell out*
decibel	dB

degree (angle)	°
degree Celsius	°C
degree Fahrenheit	°F
degree Rankine	°R
degrees of freedom	df
Department	Dept. (At end of name only)
diameter	dia (in figures and tables)
differential	d
direct current	dc
Division	Div. (At end of name only)
dollar	$
effective horsepower	ehp
electromotive force	emf
electronvolt	eV
Engineers	Engrs. (In footnotes and references only)
Equation(s)	Eq or Eqs (NOTE: NO PERIOD)
farad	F
figure(s)	Fig(s). (Only in-text and when followed by a number; spell out at the beginning of a sentence)
foot	ft
footcandle	fc
foot pound-force	ft.·lbf (use for work, energy) (see lbf·ft)
gallon	gal
gauss	G
gilbert	Gb
grain	*spell out*
gram	g
gravity (acceleration)	*g*
gray	Gy
half hard	?H
henry	H
hertz	Hz
horsepower	hp
horsepower hour	hp·h
hour	h
Hurter and Driffield scale (film density)	H&D
hydrogen ion concentration, negative logarithm of	pH
inch	in.
inch of mercury	in.·Hg
inch of water	in.·H_2O
inch pound-force	in.·lbf (use for work, energy) (see lbf·in.)

inclusive	incl (in figures and tables only)
Incorporated	Inc. (At end of name only)
indicated horsepower	ihp
inside diameter	ID (in figures and tables only)
Institute	Inst. (At end of name only)
integrated neutron flux	nvt, n/cm^2
Iron pipe size	IPS
joule	J
K alpha radiation	Ka
kelvin	K
kilocalorie	kcal
kilocycle per second	(see note on cycles per second)
kilogram	kg
kilogram-calorie	kg·cal
kilogram-force	kgf
kilogram metre	kg·m
kilometre	km
kilovolt	kV
kilovolt ampere	kVA
kiloelectronvolt	keV
kilovolt peak	kVp
kilowatt	kW
kilowatt hour	kWh
kip (1000 lbf)	*spell out*
kip (1000 lbf) per square inch	ksi
Knoop hardness number	HK (see ASTM E384)
lambert	L
litre	L
logarithm (common)	log
logarithm (natural)	ln
lumen	lm
lux	lx
magnetomotive force	mmf
mass-to-charge ratio	*m/e*
maximum	max (in figures and tables only)
maxwell	Mx
median effective concentration	EC_{50}
median effective dose	ED^{50}
median lethal concentration	LC_{50}
median lethal dose	LD_{50}
megacycles per second	(see note on cycles per second)

megagram	Mg
megawatt	MW
meta	*m*
metre	m
microampere	µA
microcurie	µCi
microfarad	µF
microgram	µg
microhenry	µH
microinch	µin.
microlitre	µL
micro-micro (prefix, use pico)	p
micrometre (formerly micron)	µm
microroentgen	µR
microsecond	µs
microvolt	µV
microwatt	µW
mil	*spell out*
mile	*spell out*
miles per hour	mph
milliampere	mA
milliangstrom	mÅ
millicurie	mCi
milliequivalent	meq
milligram	mg
millihenry	mH
millilitre	mL
millimetre	mm
millimetre of mercury	mmHg
million electronvolts	MeV
milliroentgen	mR
millisecond	ms
millivolt	mV
milliwatt	mW
minimum	min (in figures and tables only)
minute	min (spell out when used with minimum)
molal	*spell out*
molar	*M*
mole	mol
nanometre (formerly millimicron)	nm
National	Nat. (In footnotes and references only)
newton	N

normal	*N*
number(s)	No(s). (Only when followed by a number)
oersted	Oe
ohm	ó
ortho	*o*
ounce	oz
outside diameter	OD (in figures and tables only)
page	p.
pages	pp.
para	*p*
parts per billion	ppb
parts per million	ppm
pascal	Pa
per	use the diagonal line in expressions with unit symbols (Exceptions: cpm, mph, psi)
percent	%
pico (prefix)	p
picofarad	pF
pint	Pt
poise	P
Poisson's ratio	μ (v is preferred in applied mechanics)
post meridian	p.m.
pound	lb
pound-force	lbf
pound-force foot	lbf·ft (use for torque) (see ft·lbf)
pound-force inch	lbf·in. (use for torque) (see in.·lbf)
pound-force per square foot	lbf/ft2
pound-force per square inch	psi or lbf/in.^{2}
pound-force per square inch absolute	psia
pound-force per square inch gage	psig
quart	qt
rad (dose unit)	rd
radian	rad
radio frequency, *n*	rf
radio frequency, *adj*	r-f
radius	R (in figures and tables only)
Railway	Ry. (At end of name only)
Railroad	R.R. (At end of name only)
reference(s)	Ref(s)
relative humidity	RH (in figures and tables only)
revolution per minute	r/min
revolution per second	r/s

Rockwell hardness, C scale	HRC (see ASTM E18)
roentgen	R
root mean square	rms
Saybolt Furol seconds	SFS
Saybold Universal seconds	SUS
second	s
secondary	*sec*
siemens	S
Society	Soc. (At end of name only)
socket joint (tables and drawings only)	Sj
Species (singular)	sp.
Species (plural)	spp.
specific gravity	sp gr
square	use exponential form (exception: psi, ksi) c
standard taper (tables and drawings only)	TS
steradian	sr
stokes	St
tertiary	*tert*
tesla	T
thousand electronvolts	KeV
thousand pounds	kip
thousand pounds-force per square inch	ksi
ton	*spell out*
torr	*spell out*
United States	Spell out as a noun; use “U.S.” as an adjective
United States Pharmacopeia	USP
versus	*spell out*
Vickers hardness number	HV (see ASTM E92)
volt	V
volume (of a publication)	Vol (Only when followed by a number)
watt	W
watt hour	W°h
weber	Wb
week	*spell out*
yard	yd
year	*spell out*
Young's modulus	*E*

APPENDIX B: SPELLING

Included in the following list are those spellings of words commonly found in ASTM standards. For words that do not appear in this list, use the dictionary. Use international spelling for SI units; that is, litre and metre. Use the *Webster's Third New International Dictionary* for proper spelling.

A	**G**	**P**
acid	gage (measurement)	pipet (not pipette)
airborne	gastight	plaster of paris (not plaster of Paris)
airtight	gauge (tempering plaster)	
alignment	Geiger-Mhller tube	**R**
antioxidant	gray (not grey)	Rockwwell (cap)
appendixes (pl)	groundwater	**S**
B	**H**	scleroscope (lc)
babbit metal (lc)	heat treat (verb	sigma phase (spell out sigma)
bakelite (lc)	heat-treated (adj.)	siliceous
Brinell (cap)	Hooke's law (lc "l"	SR-4 strain gage
briquet		Stokes' law (lc "l")
bunsen (lc)	**I**	Sulfur
buret	indexes (pl)	
burnup	in situ (roman)	**U**
bylaws	insofar	Usage
	*iso*octane (all other "iso's" roman)	
C		**V**
catalog (not catalogue)	**K**	V-Notch (noun and adj.)
CODEN	kerosine (not kerosene)	
		X
D	**M**	X ray (noun)
database	magnetic particle inspection (not Magnaflux)	X-ray (adj and verb)
disk	metre (not meter)	
disc (CD)	microscopic (meaning very small)	
diskette (floppy)	microscopical (meaning pertaining to use of a microscope)	
drier (comp. of dry)		
dryer (apparatus)	**N**	
	neoprene (lc)	
E	nital (lc)	

ensure (meaning be sure)	nitrile rubber (butadiene) (lc)	
et al.	Normal Law integral (cap N and L)	
eutectic (noun)		
eutectoid (adj.)	**O**	
	Online	
F	3/0 emery paper (not 000)	
filename		
fireclay (adj.)		