

INCH-POUND

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FEDERAL STANDARD

SCREW-THREAD STANDARDS FOR FEDERAL SERVICES

SECTION 1

NOMENCLATURE, DEFINITIONS AND

LETTER SYMBOLS FOR SCREW THREADS

This standard was approved by the Assistant Administrator,
Office of Federal Supply and Services, General Services
Administration, for the use of all Federal Agencies.

No Deliverable Data Required By This Document

THDS

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FORWARD

This section was developed in order to provide screw thread nomenclature and symbols for the Federal Services. The present issue is a complete revision of FED-STD-H28/1A dated 28 August 1985.

FED-STD-H28/1B was prepared by the Defense Supply Center Philadelphia (DLA-IS) and incorporates the American National Standard for Nomenclature, Definitions and Letter Symbols for Screw Threads, ASME B1.7. Significant changes from the previous issue include the following:

- (1) Updating and reformatting

SECTION 1 – NOMENCLATURE, DEFINITIONS AND LETTER SYMBOLS FOR SCREW THREADS

1.0 Scope. This section establishes uniform practices with regard to screw thread nomenclature and letter symbols for designating characteristics of screw threads. These are for use on drawings, in tables of dimensions which set forth dimensional standards and in other records, and for expressing mathematical relationships.

2.0 Referenced documents.

2.1 Government publications. The issue of the following document in effect on the date of invitation for bids or request for proposal forms a part of this standard to the extent specified.

FED-STD-H28 Screw-Thread Standards For Federal Service

Copies of these documents are available online at <https://quicksearch.dla.mil/>.

2.2 Other publications. The following documents form a part of this standard to the extent specified herein. Unless a specific issue is specified, the issue in effect on the date of invitation for bids or request for proposal shall apply.

American Society for Mechanical Engineers (ASME)

B1.7 Screw Threads: Nomenclature, Definitions and Letter Symbols

Y14.38 Abbreviations and Acronyms

(Copies of these documents may be purchased from the American Society of Mechanical Engineers, Three Park Avenue New York, New York, United States, 10016-5990, or <http://www.asme.org>.)

3. Definitions. See below.

4. General requirements. Not applicable.

5. Detailed Requirements.

5.1 Screw thread nomenclature, definitions and symbols shall be in accordance with ASME B1.7. A compilation of thread series designations is also included in the standard for information.

5.2 Abbreviations for screw thread-related information used on drawings and other documents are included in ASME Y14.38.

5.3 Specialized nomenclature and symbols are not necessarily included in this section. See applicable sections of FED-STD-H28 as required.

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5.4 Obsolete symbols used in previous editions of FED-STD-H28/1 appear in Table 1 for information only.

6. Changes from previous issue. Asterisks (or vertical lines) are not used in this revision to identify changes with respect to the previous issue due to the extensive changes.

MILITARY INTERESTS:

PREPARING ACTIVITY:

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NOTE: The activities listed above were interested in this document as of the date of this document. Since organizations and responsibilities can change, you should verify the currency of the information above using the ASSIST Online database at <https://assist.daps.dla.mil>.

TABLE I.1 OBSOLETE SYMBOLS (For information only)

| Obsolete Symbol | Replacement Symbol | Characteristic |
|----------------------------------|--------------------|---|
| D_s | d | Major diameter, external thread |
| B | D_{bsc}, d_{bsc} | Basic major diameter when different from nominal size |
| D_n | D, D_3 | Major diameter, internal thread |
| E_s | d_2 | Pitch diameter, internal thread |
| E_n | D_2 | Pitch diameter, internal thread |
| K_s | d_1, d_3 | Minor diameter, external thread |
| K_n | D_1 | Minor Diameter, internal thread |
| p | P | Pitch |
| n | $1/P$ | Number of threads per inch |
| N | $1/L$ | Number of turns per inch |
| h_s/h_n | -- | Height of external/internal threads |
| h_{as}/h_{an} | -- | Addendum of external/internal threads |
| h_{ds}/h_{dn} | -- | Dedendum of external/internal threads |
| h_b | -- | Height of thread with equal addendum and dedendum |
| h_e | -- | Depth of thread engagement |
| ψ | -- | Helix angle |
| r_{cs} | -- | Crest radius, external thread |
| r_{rs} | r | Root radius, external thread |
| r_{cn} | -- | Crest radius, internal thread |
| r_{rn} | R | Root radius, internal thread |
| $S_{cs}, S_{rs}, S_{cn}, S_{rn}$ | -- | Radial distance from apex of fundamental triangle to rounded crest of external, root of external, crest of internal, root of internal threads, respectively |
| $f_{cs}, f_{rs}, f_{cn}, f_{rn}$ | -- | Radial distance from apex of fundamental triangle to flat crest of external, root of external, crest of internal, root of internal threads, respectively |

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|----------------------------------|--|--|
| $F_{cs}, F_{rs}, F_{cn}, F_{rn}$ | -- | Flat width at crest of external, root of external, crest of internal, root of internal threads, respectively |
| G | es | Allowance of major, pitch and minor diameters of external threads |
| L_e | LE | Length of thread engagement |
| L_{ts} | -- | Length of complete external thread |
| L_{tn} | -- | Length of complete internal thread including chamfer |
| δ | Δ | Variation in any dimension |
| ΔE_a | $\Delta d_{2a}, \Delta D_a$ | Pitch diameter equivalent of flank angle variation |
| ΔE_p | $\Delta d_{2\lambda}, \Delta D_{2\lambda}$ | Pitch diameter equivalent of pitch variation |

NOTE: Symbols related to measuring wire are no longer considered within the scope of this section.