

FED-STD-H28/15B
10 March 1994
SUPERSEDING
FED-STD-H28/15A
7 June 1984

FEDERAL STANDARD
SCREW-THREAD STANDARDS FOR FEDERAL SERVICES
SECTION 15
ROLLED THREADS FOR SCREW-SHELLS FOR ELECTRIC
LAMPHOLDERS AND LAMP BASES

This standard was approved by the Commissioner, Federal Supply Service, General Services Administration, for the use of all Federal agencies.

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INFORMATION SHEET ON FEDERAL STANDARDS

This Federal Standard is issued in loose-leaf form to permit the insertion or removal of new or revised pages and sections.

All users of Federal Standards should keep them up to date by inserting revised or new pages as issued and removing superseded and canceled pages.

New and revised pages will be issued under Change Notices which will be numbered consecutively and will bear the date of issuance. Change Notices should be retained and filed in front of the Standard until such time as they are superseded by a reissue of the entire Standard.

FOREWORD

This section was developed to provide standard rolled threads for screw-shells of electric lampholders and lamp bases for the Federal Services. National standards were originally published in 1915 in Bulletin No. 1474 of the American Society of Mechanical Engineers (ASME) entitled, "Rolled Threads for Screw Shells of Electric Sockets and Lamp Bases", which was a report of the ASME Committee on Standardization of Special Threads for Fixtures and Fittings. This document originally covered miniature, candelabra, medium and mogul lamp shell threads to which was added the intermediate lamp shell thread in 1927. The first issue of FED-STD-H28/15 presented data for these 5 threads and their gages.

FED-STD-H28/15A was prepared by the Defense Industrial Supply Center (DLA-IS) and incorporated the American National Standard, Specification for Electric Lamp Bases and Holders—Screw-Shell Types, ANSI C81.10-1976. Significant changes from the previous issue included: (1) addition of midget, mini-can and skirted medium lamp shell threads; (2) addition of dimensions for finished lamp base screw-shells; and, (3) updating of thread dimensions and gage requirements for screw-shells.

FED-STD-H28/15B is an updated version of FED-STD-H28/15A. In it, information from ANSI C81.10-1976 is replaced by information from superseding standards ANSI C81.61-1990, ANSI C81.62-1991, and ANSI C81.63-1991.

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SECTION 15 - Rolled Threads for Screw-Shells of Electric Lampholders and Lamp Bases

1. Scope. This section provides the standards for rolled threads for screw-shells of electric lampholders and lamp bases, their gages and acceptability requirements.

2. 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 herein.

FEDERAL STANDARD

FED-STD-H28/1 - Nomenclature, Definitions and Letter Symbols
for Screw Threads

(Activities outside the Federal Government may obtain copies of Federal specifications, standards and commercial item descriptions as outlined under General Information in the Index of Federal Specifications, Standards, and Commercial Item Descriptions. The Index, which includes cumulative bi-monthly supplements as issued, is for sale on a subscription basis by the Superintendent of Documents, U.S. Government Printing Office, Washington, DC 20402.

(Single copies of this standard and other Federal specifications, standards, and commercial item descriptions required by activities outside the Federal Government for bidding purposes are available from the General Services Administration, Federal Supply Service Bureau, Specifications Section, Suite 8100, 470 L'Enfant Plaza, S.W., Washington, DC 20407; telephone (202) 755-0325.

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

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AMERICAN NATIONAL STANDARDS

ANSI C81.61 - Electrical Lamp Bases

ANSI C81.62 - Lampholders for Electric Lamps

ANSI C81.63 - Gauges for Electric Lamp Bases and Lampholders

(Application for copies should be addressed to the American National Standards Institute, 11 West 42nd Street, New York, NY 10036-8002.)

3. Definitions. The terms applicable to this standard are defined in FED-STD-H28/1.

4. General requirements. Not applicable.

5. Detailed requirements.

5.1 Form of thread. The thread form is composed of two circular segments tangent to each other and of equal radii as shown in Figure 15.1.

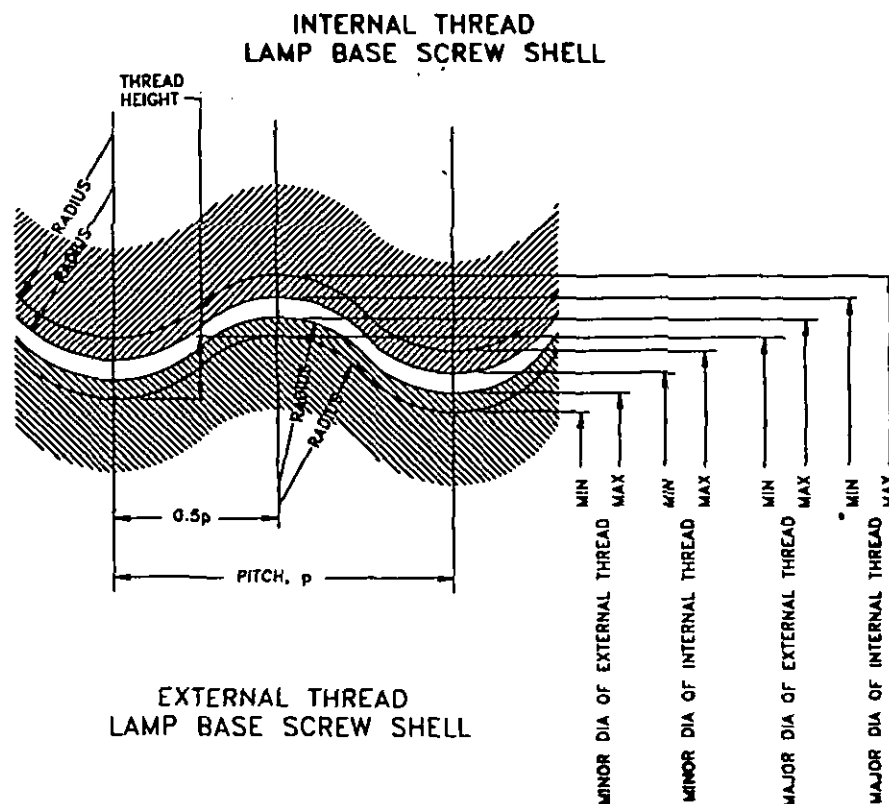


FIGURE 15.1 ILLUSTRATION OF THREADS FOR ELECTRIC LAMP BASES AND LAMP HOLDERS

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5.2 Lamp base screw-shells.

5.2.1 Data for lamp base screw-shells, which are used on lamp bases, plug type fuses (medium lamp base thread), and similar devices, shall be in accordance with the applicable standard sheets in ANSI C81.61. These data are tabulated in Table XV.1 for reference. For each screw base, the lamp base thread and applicable standard sheet appear in Table XV.2.

5.2.2 Gaging for lamp screw base conformance, including conformance of threads, shall be in accordance with the applicable standard sheets in ANSI C81.63. These gages and the applicable standard sheets are tabulated in Table XV.2 for reference.

5.3 Lampholder screw-shells.

5.3.1 Data for lampholder screw-shells, which are used for lampholders, fuseholders (medium lampholder thread), and similar devices, shall be in accordance with the applicable standard sheets in ANSI C81.62. These data are tabulated in Table XV.3 for reference. For each lampholder, the lampholder thread and applicable standard sheet appear in Table XV.4.

5.3.2 Gaging for lampholder screw-shell conformance, including conformance of threads, shall be in accordance with the applicable standard sheets in ANSI C81.63. These gages and the applicable standard sheets are tabulated in Table XV.4 for reference.

MILITARY INTERESTS:

Custodians:

Army - AR
Navy - AS
Air Force - 99

Review Activities:

Army - CR, ME, MI
Air Force - 82
DLA - GS

User Activities:

Navy - EC, OS, SH, YD

CIVIL AGENCY COORDINATING ACTIVITY:

GSA - 7FXE

PREPARING ACTIVITY:

DLA - IS
(DoD Project THDS-0099)

TABLE XV.1 ROLLED THREADS FOR LAMP BASE SCREW SHELLS. SEE 5.2.1

THREAD DESIGNATION	THREADS PER INCH	PITCH, p	HEIGHT (DEPTH) OF THREAD	RADIUS, r	UNMOUNTED				ON FINISHED LAMP			
					MAJOR DIA, d		MINOR DIA, d ₁		MAJOR DIA, d		MINOR DIA, d ₁	
					MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
Midget lamp base thread	25.4	0.03937	0.011	0.0115	0.210	0.206	0.188	—	0.210	0.206	0.188	—
Miniature lamp base thread	14	0.07143	0.020	0.0210	0.375	0.365	0.335	—	0.3765	0.365	0.3365	—
Mini-Can lamp base thread	14	0.07143	0.020	0.0210	—	—	—	—	0.425	0.415	0.385	—
Candleabra lamp base thread	10	0.10000	0.025	0.0312	0.465	0.455	0.415	—	0.468	0.455	0.418	—
Intermediate lamp base thread	9	0.11111	0.027	0.0353	0.651	0.641	0.597	—	0.655	0.641	0.601	—
Medium lamp base thread	7	0.14286	0.033	0.0469	1.037	1.029	0.971	—	1.043	1.029	0.977	—
Skirted medium lamp base thread	7	0.14286	0.033	0.0469	1.042	1.029	0.976	—	1.042	1.029	0.976	—
Mogul lamp base thread	4	0.25000	0.050	0.0906	1.555	1.542	1.455	—	1.559	1.542	1.460	—
Position-oriented Mogul thread	4	0.25000	0.050	0.0906	1.555	1.542	1.455	—	1.560	1.542	1.460	—

TABLE XV.2 ELECTRIC LAMP SCREW BASE REQUIREMENTS. SEE 5.2.1 AND 5.2.2

SCREW BASE	LAMP BASE THREAD	ANSI C81.61 STD SHEET FOR BASE	APPLICABLE GAGES	ANSI C81.63 STD SHEETS FOR GAGES
Midget (IEC E5)	Midget	1-100-*	GO thread gage NOT-GO plain gage	3-100- 3-101-*
Miniature (IEC E10/12)	Miniature	1-111-*	GO thread gage NOT-GO plain gage	3-112- 3-111-*
Mini-Can (E11)	Mini-can	1-123-*	GO thread gage	3-123-*
Candelabra (E12/15)	Candelabra	1-131-*	GO contact (plain) gage GO thread gage NOT-GO plain gage	3-133- 3-130- 3-132-*
Intermediate (IEC E17/20)	Intermediate	1-144-*	GO contact (plain) gage GO thread gage NOT-GO plain gage	3-146- 3-144- 3-145-*
Single contact medium (IEC E26/24) Double contact medium (IEC E26d)	Medium	1-157- 1-158-*	GO contact (plain) gage-single & double GO thread gage-finished lamp GO thread gage-unmounted base NOT-GO plain gage Double contact base gages	3-165- 3-156- 3-159- 3-158- 3-163- 3-164-*
Skirted medium (E26/50 x 39) Skirted medium (E26/53 x 39)	Skirted medium	1-159- 1-162-*	GO contact (plain) gage GO thread gage NOT-GO plain gage	3-166- 3-160- 3-158-*
Mogul (IEC E39) Double contact Mogul (E39d)	Mogul	1-185- 1-187-*	GO contact (plain) gage GO thread gage NOT-GO plain gage	3-187- 3-185- 3-186-*
Position-oriented Mogul (EP39)	Mogul	1-202-*	GO contact (plain) gage GO thread gage NOT-GO plain gage	3-203- 3-202- 3-186-*

* Third number indicates the issue number - latest issue applies.

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TABLE XV.3 ROLLED THREADS FOR LAMPHOLDER SCREW SHELLS. SEE 5.3.1

THREAD DESIGNATION	THREADS PER INCH	PITCH, p	HEIGHT (DEPTH) OF THREAD	RADIUS, R	MAJOR DIA, D		MINOR DIA, D_1	
					MAX	MIN	MIN	MAX
Midget lampholder thread	25.4	0.03937	0.011	0.0115	0.212	0.216	0.190	0.194
Miniature lampholder thread	14	0.07143	0.020	0.0210	0.3775	0.3835	0.3375	0.3435
Mini-Can lampholder thread	14	0.07143	0.020	0.0210	0.4275	0.4335	0.3875	0.3935
Candleabra lampholder thread	10	0.10000	0.025	0.0312	0.470	0.476	0.420	0.426
Intermediate lampholder thread	9	0.11111	0.027	0.0353	0.657	0.664	0.603	0.610
Medium lampholder thread	7	0.14286	0.033	0.0469	1.045	1.053	0.979	0.987
Mogul lampholder thread	4	0.25000	0.050	0.0906	1.565	1.577	1.465	1.477

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TABLE XV.4 SCREEN-SHELL REQUIREMENTS FOR ELECTRIC LAMP HOLDERS. SEE 5.3.1 AND 5.3.2

LAMP HOLDER	LAMP HOLDER TERMINAL	ANSI C81.62 STD SHEET FOR LAMP HOLDER	APPLICABLE GAGES	ANSI C81.63 STD SHEETS FOR GAGES
Midget (IEC E5)	Midget	2-100-*	GO thread gage NOT-GO plain gage	3-104- 3-105-*
Miniature (E10)	Miniature	2-111-*	GO contact (threaded) gage GO thread gage NOT-GO plain gage	3-117- 3-115- 3-116-*
Mini-Can (E11)	Mini-Can	2-123-*	GO contact (threaded) gage	3-125-*
Candelabra (IEC E12)	Candelabra	2-131-*	GO contact (threaded) gage GO thread gage NOT-GO plain gage	3-138- 3-136- 3-137-*
Intermediate (E17)	Intermediate	2-144-*	GO contact (threaded) gage GO thread gage NOT-GO plain gage	3-151- 3-149- 3-150-*
Single contact medium (IEC E26)	Medium	2-157-*	GO contact (threaded) gage GO thread gage NOT-GO plain gage	3-171- 3-169- 3-170-*
Double contact medium (IEC E26d)	Medium	2-158-*	GO contact (threaded) gage for metal-shell paper lined holder GO contact (threaded) gage for porcelain or molded holder GO thread gage NOT-GO plain gage GO/NOT-GO contact (plain) gage for radial position of intermediate contact GO contact (threaded) gage for relative axial position of contacts Improper contact gage	3-177- 3-178- 3-174- 3-170- 3-175- 3-176- 3-179-*
Mogul (E39)	Mogul	2-185-*	GO contact (threaded) gage GO thread gage NOT-GO plain gage Removal torque test gages - Only for threaded shell gripping lamp bases	3-192- 3-190- 3-191- 3-195- 3-196-*
Position-oriented Mogul (EP39)	Mogul	2-202-*	GO contact (threaded) gage GO thread gage NOT-GO plain gage Insertion clearance gage	3-205- 3-190- 3-191- 3-204-*

* Third number indicates the issue number - latest issue applies.

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3. DOCUMENT TITLE

ROLLED THREADS FOR ... ELECTRIC LAMPHOLDERS AND LAMP BASES

4. NATURE OF CHANGE (Identify paragraph number and include proposed rewrite, if possible. Attach extra sheets if needed.)

5. REASON FOR RECOMMENDATION

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