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INCH-POUND

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23 August 1991
SUPERSEDING
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30 December 1980
(see 6.10)

PERFORMANCE SPECIFICATION

FUSEHOLDERS, EXTRACTOR POST TYPE, BLOWN FUSE INDICATING AND NONINDICATING GENERAL SPECIFICATION FOR

This specification is approved for use by all departments and agencies of the Department of Defense.

1. SCOPE

1.1 Scope. This specification covers enclosed, panel mounted, extractor post type electrical fuseholders, both blown fuse indicating and nonindicating.

1.2 Classification. Fuseholder types shall be of the following characteristics, construction, enclosures, and styles as specified (see 6.8.1).

1.2.1 Characteristic. The characteristic is identified by a single letter "L" or "N" which signify the following:

L - Indicating (blown fuse indication feature)
N - Nonindicating.

1.2.2 Construction. The construction is identified by a two-digit number and indicates the design and physical dimensions of a particular holder.

Beneficial comments, recommendations, additions, deletions, clarifications, etc., and any data which may improve this document should be sent to: Defense Electronics Supply Center, ATTN: DESC- ELDM 1507 Wilmington Pike, Dayton, OH 45444-5765, or telephone (513) 296-6189, or facsimile (FAX) (513) 296-8868.

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1.2.3 Enclosure. The degree of enclosure is indicated by a single or double letter which denotes the following:

U – Unsealed
G – Dripproof
S – Splashproof
W – Watertight
WB – Watertight and body sealed.

1.2.4 Style. When more than one style of fuseholder is provided within a single type and rating, each style is designated by a single number. When only one style is provided, the style number is omitted from the type designation.

2. APPLICABLE DOCUMENTS

2.1 Government documents.

2.1.1 Specifications, standards, and handbooks. The following specifications, standards, and handbooks form a part of this document to the extent specified herein. Unless the issues of these documents are those listed in the issue of the Department of Defense Index of Specifications and Standards (DODISS) and supplement thereto, cited in the solicitation (see 6.2).

SPECIFICATIONS

FEDERAL

QQ-N-290	Nickel Plating (Electrodeposited)
QQ-S-365	Silver Plating, Electrodeposited: General Requirements for
QQ-S-571	Solder: Tin Alloy, Tin-Lead Alloy, and Lead Alloy
ZZ-R-765	Rubber, Silicone
PPP-B-566	Boxes, Folding, Paperboard
PPP-B-636	Box, Shipping, Fiberboard
PPP-B-676	Boxes, Setup
PPP-F-320	Fiberboard: Corrugated and Solid, Sheet Stock (Container Grade) and Cut Shapes

MILITARY

MIL-M-14	Molding Compounds, Thermosetting
MIL-P-116	Preservation, Methods of

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MIL-R-2765	Rubber Sheet, Strip, Extruded, and Molded Shapes, Synthetic, Oil Resistant
MIL-T-10727	Tin Plating; Electrodeposited or Hot-Dipped, for Ferrous and Nonferrous Metals
MIL-F-15160	Fuses, Instrument, Power, and Telephone
MIL-R-15624	Rubber Gasket Material, 50 Durometer Hardness (Maximum)
MIL-F-23419	Fuse, Cartridge, Instrument Type, General Specification for
MIL-P-25732	Packing, Preformed, Petroleum Hydraulic Fluid Resistant, Limited Service at 275 °F (135 °C)
MIL-G-27617	Grease, Aircraft and Instrument, Fuel and Oxidizer Resistant

STANDARDS

FEDERAL

FED-STD-H28	Screw-Thread Standards for Federal Services
FED-STD-H28/2	Unified Inch Screw Threads – UN and UNR Thread Forms
FED-STD-595	Colors Used in Government Procurement

MILITARY

MIL-STD-108	Definitions of and Basic Requirements for Enclosures for Electric and Electronic Equipment
MIL-STD-129	Marking for Shipment and Storage
MIL-STD-130	Identification Marking of U.S. Military Property
MIL-STD-147	Palletized Unit Loads
MIL-STD-202	Test Methods for Electronic and Electrical Component Parts
MIL-STD-454	Standard General Requirements for Electronic Equipment
MIL-STD-810	Environmental Test Methods and Engineering Guidelines
MIL-STD-1285	Marking of Electrical and Electronic Parts

(See supplement 1 for list of associated specifications.)

(Unless otherwise indicated, copies of federal and military specifications, standards, and handbooks are available from the Standardization Documents Order Desk, Building 4D, 700 Robbins Avenue, Philadelphia, PA 19111-5094.)

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2.2 Non-Government publications. The following documents form a part of this document to the extent specified herein. Unless otherwise specified, the issues of the documents which are DOD adopted are those listed in the issue of the DODISS cited in the solicitation. Unless otherwise specified, the issues of documents not listed in the DODISS are the issues of the documents cited in the solicitation (see 6.2).

AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

B 633	Standard Specification for Electrodeposited Coatings of Zinc on Iron and Steel; (DOD adopted)
D 3935	Standard Specification for Poly Carbonate (PC) Unfilled and Reinforced Material; (DOD adopted)

(Application for copies should be addressed to the American Society for Testing and Materials, 1916 Race Street, Philadelphia, PA 19103.)

(Non-Government standards and other publications are normally available from the organizations that prepare or distribute the documents. These documents also may be available in or through libraries or other informational services.)

2.3 Order of precedence. In the event of a conflict between the text of this document and the references cited herein (except for related specification sheets), the text of this document takes precedence. Nothing in this document, however, supersedes applicable laws and regulations unless a specific exemption has been obtained.

3. REQUIREMENTS

3.1 Specification sheets. The individual item requirements shall be as specified herein and in accordance with the applicable specification sheet. In the event of any conflict between the requirements of this specification and the specification sheet, the latter shall govern (see 6.2).

3.2 Qualification. Fuseholders furnished under this specification shall be products which are authorized by the qualifying activity for listing on the applicable qualified products list at the time of award of contract (see 4.4 and 6.4).

3.3 Material. Material shall be as specified herein (see 4.1). However, when a definite material is not specified, a material shall be used which will enable the fuseholders to meet the performance requirements of this specification. Acceptance or approval of any constituent material shall not be construed as a guaranty of the acceptance of the finished product.

3.3.1 Recovered material. Unless otherwise specified herein, all equipment, material, and articles incorporated in the products covered by this specification shall be new and may be fabricated using materials produced from recovered materials to the maximum extent practicable without jeopardizing the intended use. The term "recovered materials" means materials which have been collected or

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recovered from solid waste and reprocessed to become a source of raw materials, as opposed to virgin raw materials. None of the above shall be interpreted to mean that the use of used or rebuilt products is allowed under this specification unless otherwise specifically specified.

3.3.2 Restricted materials.

3.3.2.1 Current carrying parts. Material containing more than 5 percent iron by weight shall not be used for current-carrying parts.

3.3.2.2 Flammable material. Material used shall be fire retardant in accordance with MIL-STD-454, requirement 3.

3.3.2.3 Toxic and hazardous material. Toxic and hazardous material shall conform to requirement 1 of MIL-STD-454.

3.3.3 Plastic material.

3.3.3.1 Body molding. Plastic material used for body and carrier moldings shall be type MAI-60, SDG-F, or GDI-30F of MIL-M-14 as specified (see 3.1). Plastic materials shall be non-fungus nutrient or shall be treated to resist fungus growth. The color of plastic moldings, except transparent caps, shall approximate a light gray semigloss 26307 of FED-STD-595.

3.3.3.2 Caps (see 3.4.3).

3.3.4 Metals. Metals shall be of a corrosion-resistant type or shall be treated to resist corrosion.

3.3.4.1 Dissimilar metals. The selection and protection of dissimilar metals combinations shall be in accordance with requirement 16 of MIL-STD-454.

3.3.4.2 Soldering. Where soldering is employed, the solder shall conform to QQ-S-571. Only substantially noncorrosive fluxes shall be used. All excess flux shall be removed. Solder shall not be used primarily for obtaining mechanical strength. Electrical connections shall be mechanically secure and electrically continuous before and after soldering.

3.3.4.3 Finish, fuse mating surface. Unless otherwise specified (see 3.1), current carrying fuse mating contact surfaces shall be silver plated in accordance with QQ-S-365 and shall be 99.9 percent pure silver, not coin silver. Minimum thickness of silver plating shall be 0.0003 inch. Where bright alloy plating is specified the alloy shall be as follows:

Copper	– 50 to 60 percent
Tin	– 25 to 28 percent
Zinc	– 14 to 18 percent

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3.3.4.4 Finish, non-mating surfaces. Unless otherwise specified (see 3.1), surfaces which do not contact the fuse shall be tin plated in accordance with MIL-T-10727, nickel plated in accordance with QQ-N-290, or bright alloy plated as specified in 3.3.4.3. The minimum plating thickness shall be:

Tin	– 0.0003 inch
Nickel	– 0.0002 inch
Bright alloy	– 0.0002 inch

3.3.5 Gaskets. Gaskets, when required, shall be furnished with the fuseholder.

3.3.5.1 O-ring gaskets. Unless otherwise specified (see 3.1), O-ring gaskets shall be in accordance with MIL-P-25732.

3.3.5.2 Flat gaskets. Unless otherwise specified (see 3.1 and 3.4.6), flat gaskets shall be fabricated from material conforming to ZZ-R-765, MIL-R-2765, or class I of MIL-R-15624.

3.3.6 Lubricant. O-ring gaskets shall be lubricated with grease conforming to MIL-G-27617.

3.3.7 Indicator lamps.

3.3.7.1 Glow lamps. Glow lamps specified for characteristic L fuseholders shall be industry type A9A, or equal.

3.3.7.2 Incandescent lamps. Unless otherwise specified (see 3.1), incandescent lamps, industry no. 1764 shall be used in characteristic L fuse-holders where the fuseholder rating is less than 90 volts (V). Incandescent lamps that are captive within the fuseholder cap assembly shall be cemented or encapsulated in place.

3.3.8 Resistors. Resistors used with indicating lamp type fuseholders shall be as specified in the applicable specifications sheet (see 3.1).

3.4 Construction and physical dimensions. The fuseholders shall be constructed and have physical dimensions as specified (see 3.1, 4.2, and 4.6).

3.4.1 Extractor post type. Extractor post type shall be for panel mounting and shall consist of a tubular body or other enclosure and a removable cap assembly which together encloses the fuse and provides for ready removal and replacement of the fuse from the front of the panel.

3.4.2 Indicating type. Indicating fuseholders shall be of the lamp or mechanical type (see 3.1). Lamp type fuseholders shall have an incandescent or neon glow lamp which lights when the fuse has blown. Mechanical type shall be provided with clear caps to permit visual examination of the fuse indicator.

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3.4.3 Caps. Caps for fuseholders with neon or incandescent lamp type indicators shall be made from polycarbonate plastic conforming to ASTM D 3935. Caps containing neon lamps or mechanical indicators shall be clear, and essentially colorless. Caps containing incandescent lamp indicators shall be clear or amber color. Caps for nonindicating fuseholders shall be made from the same material as the associated fuseholder bodies, except for FHL15G-002 which shall be polycarbonate plastic conforming to ASTM D 3935 color gray.

3.4.4 Ground test point. Ground test points shall be provided when required (see 3.1). The test points shall be in electrical contact with the associated load terminals of the fuseholders. The circuits shall be independent of fuses, resistors and indicator lamps. Unless otherwise specified, the test point contact shall be recessed a minimum of 0.125 inch from the outer surface of the cap. The test point holes shall accommodate a test prod 0.080 ± 0.001 inch in diameter and shall facilitate insertion of the test prod. Test point contacts accessible from the extension of assembled fuseholders (caps in place) shall be recessed 0.062 to 0.375 inch within the test point holes. The degree of enclosure requirement shall not be diminished by the test point provision.

3.4.5 Extraction of fuses. Unless otherwise specified (see 3.1), fuses shall be extracted from the fuseholder body, captive with the cap assembly. Fuses shall be removable from the cap assembly without use of any tools.

3.4.6 Mounting hardware. Unless otherwise specified (see 3.1), fuseholders shall be provided with mounting hardware. Mounting hardware shall be stainless steel or steel zinc plated in accordance with ASTM B 633, type II, class Fe/Zn13. Unless otherwise specified (see 6.2), mounting hardware, including flat gaskets and sealing washers if applicable, and the terminal hardware may be assembled on the fuseholder or placed in a sturdy bag attached to the fuseholder. Where mounting nuts or plates are used, a threaded metal insert may be used in lieu of.

3.4.6.1 Unless otherwise specified (see 6.2) mounting hardware, including the flat gaskets and sealing washers, if applicable, and the terminal hardware may be assembled on the fuseholder or placed in a sturdy bag attached securely to the fuseholder.

3.4.7 Threaded parts. Unless otherwise specified (see 3.1), threaded terminals and mounting screws shall be in accordance with FED-STD-H28 and FED-STD-H28/2, coarse thread series, except plastic threads around the body of a fuseholder designed for single hole mounting need not comply, but shall match the threads of the engaging nuts.

3.4.8 Butt contacts. The fuse contacting surface of butt type contacts shall have a diameter not less than 75 percent of the nominal diameter of the ferrule of the specified test fuse (see 3.1).

3.4.9 Solder-lug terminals. Unless otherwise specified (see 3.1), solder-lug terminals shall be hot-tin or hot-solder dipped to facilitate soldering (see 3.3.4.2 and 4.6.21).

3.4.10 Riveting. Rivets shall be properly set, flanged, or rolled, with no evidence of fatigue imposed upon the rivets. There shall be no evidence of cracking, chipping, peeling, denting, or other deformation of the material riveted. Riveted electrical joints shall be soldered after riveting.

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3.5 Performance.

3.5.1 Enclosure. The degree of fuseholder enclosure seal shall be in accordance with MIL-STD-108 and shall be as specified in 3.5.1.1 through 3.5.1.5 (see 3.1 and 4.6.16).

3.5.1.1 Unsealed. Unsealed fuseholders shall not be required to meet an enclosure requirement.

3.5.1.2 Dripproof. Dripproof fuseholders shall seal against leakage into the fuseholder or into the enclosure upon which it is mounted (see 4.6.16.2).

3.5.1.3 Splashproof. Splashproof fuseholders shall seal against leakage into the fuseholder or into the enclosure upon which it is mounted (see 4.6.16.3).

3.5.1.4 Watertight. Watertight fuseholders shall seal against leakage into the fuseholder or into the enclosure upon which it is mounted (see 4.6.16.4).

3.5.1.5 Watertight and body sealed. Watertight and body sealed fuseholders shall seal against leakage into the fuseholder or into the enclosure upon which it is mounted (see 4.6.16.5).

3.5.2 Terminal strength. When fuseholders are tested as specified in 4.6.3, the terminals shall not break or loosen and there shall be no damage to the fuseholder body.

3.5.3 Torque strength of inserts, threaded terminals, and molded threads. Inserts and threaded terminals shall not loosen, strip, or deform the threads (see 4.6.19). Fixed terminals shall not rotate. Single hole mounted fuseholders shall not break, strip threads, rotate or pull through the mounting holes. Gaskets shall not be damaged and fuseholder caps shall not bind. Fuseholders shall not depend upon gaskets or O-rings to serve as mounting flanges.

3.5.4 Dielectric withstanding voltage. There shall be no breakdown, flashover, arcing, or current flow in excess of 1 milliampere (mA) (see 4.6.4).

3.5.5 Dielectric withstanding voltage (reduced barometric pressure). When specified (see 3.1), fuseholders shall be tested as specified in 4.6.5. There shall be no breakdown, flashover, arcing, or current flow in excess of 1 mA.

3.5.6 Insulation resistance. Insulation resistance shall be not less than 1,000 megohms (see 4.6.6).

3.5.7 Contact resistance. Contact resistance shall not exceed 0.005 ohms (see 4.6.7). Following the endurance and moisture resistance tests, the contact resistance shall not exceed 0.010 ohms.

3.5.8 Overload. There shall be no damage and the fuseholders shall be mechanically and electrically operative (see 4.6.8).

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3.5.9 Endurance. Fuseholders shall remain electrically and mechanically operative during and following the endurance test (see 4.6.9). Deposit of copper from dummy fuse on contacts of fuseholder shall not be considered failure. At completion of test, the contact resistance shall not exceed the value specified in 3.5.7.

3.5.10 Temperature rise. Temperature rise of each terminal shall not exceed 70 degrees Celsius (°C) (see 4.6.10).

3.5.11 Short circuit. There shall be no welding or sticking of contacts, mechanical failure, or damage to the fuseholder; provided however, that any failure may result from gases or from flames emanating from the fuse shall not constitute failure of the fuseholder (see 4.6.11).

3.5.12 Indicating lamp (indicating type fuseholders only). The indicating lamp shall remain operative and be clearly visible (see 4.6.12). No distortion of lens cap shall be permitted.

3.5.13 Vibration. Fuseholders shall remain mechanically and electrically operative and there shall be no opening of the fuseholder contacts in excess of 10 microseconds (µs) (see 4.6.13). Failure of the fuse shall not be considered as a failure of the fuseholder.

3.5.14 Mechanical shock. Fuseholders shall remain mechanically and electrically operative during the tests and there shall be no damage (see 4.6.14). Momentary opening of contacts shall not exceed 20 milliseconds (ms). Failure of the fuse shall not be considered as failure of the fuseholder.

3.5.15 Moisture resistance. There shall be no breaking, cracking, spalling, or loosening of terminals (see 4.6.15). During the tenth cycle, at a relative humidity (RH) of 90 to 95 percent and a temperature of 23 ± 1 °C, the insulation resistance shall be not less than 1 megohm. Following the 24-hour conditioning period, the insulation resistance shall be not less than 50 megohms; the contact resistance shall be as specified in 3.5.7.

3.5.16 Thermal shock. There shall be no breaking, cracking, spalling, or loosening of parts (see 4.6.17). Fuseholder caps shall be easily removed and replaced without tools (mittens excepted) when fuseholders are thermally stabilized at temperature of plus 85 °C and minus 55 °C. After the fuseholder has returned to thermal stability at room temperature following the final cycle, the insulation resistance shall be not less than 100 megohms.

3.5.17 Salt spray (corrosion). Fuseholders, including mounting hardware, shall evidence no excessive corrosion (see 4.6.18). Excessive corrosion is defined as that which interferes with the electrical or mechanical performance and, in the case of plated metals, corrosion which has passed through the plating and exposed the base metal. There shall be no warping, cracking, or other damage. Fuses shall be easily replaced when checked 24 hours after removal from the salt spray chamber.

3.5.18 Voltage drop. When specified (see 3.1), voltage drop shall not exceed 20 millivolts (mV) (see 4.6.20).

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3.6 Marking. Fuseholders shall be marked in accordance with MIL-STD-130 with the following:

a. Type designation (see 6.8.1)
b. Manufacturer's name or code symbol in accordance with MIL-STD-1285
c. Current and voltage ratings
d. Additional marking shall be as shown in the applicable specification sheet.

3.7 Workmanship. Workmanship shall be in accordance with requirement 9 of MIL-STD-454. Fuseholders shall be manufactured and processed in such a manner as to assure compliance with all requirements of this specification and the applicable specification sheet.

4. QUALITY ASSURANCE PROVISIONS

4.1 Responsibility for inspection. Unless otherwise specified in the contract or purchase order, the contractor is responsible for the performance of all inspection requirements (examinations and tests) as specified herein. Except as otherwise specified in the contract or purchase order, the contractor may use his own or any other facilities suitable for the performance of the inspection requirements specified herein, unless disapproved by the Government. The Government reserves the right to perform any of the inspections set forth in this specification where such inspections are deemed necessary to ensure supplies and services conform to prescribed requirements.

4.1.1 Responsibility for compliance. All items shall meet all requirements of sections 3 and 5. The inspection set forth in this specification shall become a part of the contractor's overall inspection system or quality program. The absence of any inspection requirements in the specification shall not relieve the contractor of the responsibility of ensuring that all products or supplies submitted to the Government for acceptance comply with all requirements of the contract. Sampling inspection, as part of the manufacturing operations, is an acceptable practice to ascertain conformance to requirements, however, this does not authorize submission of known defective material, either indicated or actual, nor does it commit the Government to accept defective material.

4.1.1.1 Test fuse. Test fuses required in some tests herein shall be standard fuses meeting the requirements of MIL-F-15160 or MIL-F-23419 for the types and ratings indicated in the specification sheets for fuseholders.

4.1.1.2 Copper dummy fuse. Copper dummy fuses required in some tests herein shall consist of copper bars, cylinders, or rods having the length and diameter or terminal dimensions required by MIL-F-15160 and MIL-F-23419 for corresponding standard fuses.

4.2 Classification of inspections. The inspection requirements specified herein are classified as follows:

a. Qualification inspection (see 4.4)
b. Quality conformance inspection (see 4.5).

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4.3 Inspection conditions. Unless otherwise specified herein, inspection conditions shall be in accordance with the general requirements of MIL-STD-202.

4.3.1 Warning. Potentially hazardous situations could develop in some of the test methods specified in this specification. Precautions should therefore be taken to ensure that test personnel are adequately protected and observe the necessary safety measures at all times.

4.4 Qualification inspection. Qualification inspection shall be performed at a laboratory acceptable to the Government (see 6.4). Qualification inspection shall consist of the examination and tests shown in table I.

TABLE I. *Qualification inspection.*

Examination or test	Requirement	Test method
Group I – All samples		
Visual and mechanical examination including inspection for all defects in Table IV	3.1, 3.3 and 3.4	4.6.2
Indicating lamp (characteristic L) as for group A tests	3.5.12	4.6.12
Insulation resistance	3.5.6	4.6.6
Contact resistance	3.5.7	4.6.7
Enclosure (sealed types only)	3.5.1	4.6.16
Group II – Two samples		
Thermal shock	3.5.16	4.6.17
Terminal Strength	3.5.2	4.6.3
Moisture resistance	3.5.15	4.6.15
Salt spray (corrosion)	3.5.17	4.6.18
Dielectric withstanding voltage	3.5.4	4.6.4
Group III – Two samples		
Solderability	3.4.9	4.6.21
Overload	3.5.8	4.6.8
Temperature rise	3.5.10	4.6.10
Endurance	3.5.9	4.6.9
Dielectric withstanding voltage	3.5.4	4.6.4
Group IV – Two samples		
Vibration	3.5.13	4.6.13
Mechanical shock	3.5.14	4.6.14
Indicating lamp	3.5.12	4.6.12
Dielectric withstanding voltage	3.5.4 and 3.5.5 (see 3.1)	4.6.4 and 4.6.5

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TABLE I. *Qualification inspection – Continued.*

Examination or test	Requirement	Test method
Group V – Two samples		
Voltage drop (when specified)(see 3.1)	3.5.18	4.6.20
Torque strength of inserts, threaded terminals and molded threads	3.5.3	4.6.19
Dielectric withstanding voltage	3.5.4	4.6.4
Group VI – Two samples		
Short circuit	3.5.11	4.6.11
Dielectric withstanding voltage	3.5.4	4.6.4

4.4.1 Samples for qualification. Samples submitted for qualification approval shall be representative of the contractor's normal production and shall be taken, preferably, from a current production lot. Ten specimens of each type for which approval is requested shall be submitted for qualification approval. However, when a contractor's design for a particular type is basically the same in various current or voltage ratings, one set of specimens may be submitted for approval of that design. For this case, approval shall be extended to all units submitted by the same contractor of the same design of lower current or voltage rating. Qualification approval of a type listed in column I of table II shall be extended to the type shown opposite in column II except for visual and mechanical examination and the tests listed in column III. Two samples of each fuseholder listed in column II shall be submitted for visual and mechanical examination. Samples for tests listed in column III shall be tested as specified in the applicable group in table I.

TABLE II. *Extended approval.*

Column I Approved type	Column II Extend approval to	Column III Except for visual and mechanical examination and the following tests
FHL10U FHL12U	FHL11U, FHL29G, FHL30G, FHL10G FHL12G	Mechanical shock, vibration, endurance, indicator light, and enclosure
FHL14G	FHL13G	Mechanical shock, vibration, endurance, indicator light, and enclosure
FHL17G1 FHL17G2	FHL18G1 FHL18G2	Enclosure, mechanical shock, vibration, indicator light
FHN19W	FHN26W	Enclosure, temperature rise, and short circuit

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TABLE II. *Extended approval – Continued.*

Column I Approved type	Column II Extend approval to	Column III Except for visual and mechanical examination and the following tests
FHN26G1 FHN26G2	FHN31G1 FHN31G2	Enclosure
FHL34W	FHL33W	Temperature rise, short circuit
FHL35W	FHL32W	Temperature rise, short circuit
FHN41WB	FHN28WB FHN28W[1] FHN41W[1]	Enclosure, temperature rise, body insert, and terminal strength
	FHN46WB FHN46W[1]	Enclosure, temperature rise, mechanical shock, vibration, body insert, and terminal strength
	FHN47WB FHN47W[1]	Enclosure, temperature rise, mechanical shock, vibration, body insert, and terminal strength
FHL44G	FHL45G	Enclosure, mechanical shock, vibration, indicator light
FHL48U	FHL49U	Mechanical shock, vibration, indicator light
FHL57G	FHL58G	Mechanical shock, vibration, endurance, indicator light, and enclosure

[1]Type "W" fuseholders are qualified when the associated "WB" types have passed satisfactory testing.

4.4.2 Inspection routine. Sample fuseholders shall be subjected to the qualification inspection specified in table I in the order shown. After completion of the group I examination and tests, the specimens shall be divided into the remaining groups shown in table I and subjected to the tests for their particular group.

4.4.2.1 Inspection of the Group I samples shall include inspections for all defects listed in table III.

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TABLE III. *Classification of defects.*

Catagories	Defects
Critical:	
1	Use of restricted materials
2	Test point contact not recessed to minimum dimension
3	Failure to pass dielectric withstanding voltage test
4	Failure to pass enclosure test
5	Failure to pass contact resistance test
6	Failure to pass insulation resistance test
Major:	
101	Type not as specified
102	Failure to comply with performance requirements
103	Resistor not as specified
104	Lamp not as specified
105	Plating material or thickness not as specified
106	Materials less than minimum requirements
107	Missing mounting hardware or terminal hardware
108	Mounting characteristics not as specified
109	Fuseholder, carrier, or cap damaged, or incomplete, marking missing or illegible
110	O-ring gasket or flat gasket missing
111	Lubricant missing from O-ring gasket
112	Preservation, packaging and packing not as specified
Minor:	
201	Incorrect location of manufacturer's name or logo

4.4.3 Failure. Failure in any of the examinations or tests shall be cause for refusal to grant qualification approval.

4.4.4 Retention of qualification. To retain qualification, the contractor shall forward a report, via the Government inspector, at 36-month intervals to the qualifying activity. The qualifying activity shall establish the initial reporting date. The report shall be submitted within 2 months of the end of the reporting period and shall consist of:

a. Certification of materials (see 3.3)

b. A summary of the results of the tests performed for groups A and B, indicating as a minimum the number of lots that have passed and the number that have failed. The results of tests of all reworked lots shall be identified and accounted for.

c. A summary of the results of tests performed for group C, including the number and mode of failures. If the summary of the test results indicates nonconformance with specification requirements, and corrective action acceptable to the qualifying activity has not been taken, action may be taken to remove the failing product from the qualified products list.

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d. If a sample fails to pass group C inspection, the contractor shall notify the qualifying activity and cognizant inspection activity of such failure and take corrective action on the materials or processes, or both, as warranted, and on all units of product which can be corrected and which were manufactured under essentially the same conditions, with essentially the same materials and processes, and which are considered subject to the same failure. Acceptance of the product will be discontinued until corrective action acceptable to the Government has been taken. After the corrective action has been taken, group C inspection should be repeated on additional sample units (all inspection, or the inspection which the original sample failed, at the option of the Government). Groups A and B inspection may be reinstituted; however, final acceptance will be withheld until the group C reinspection has shown that the corrective action was successful. In the event of failure after reinspection, information concerning the failure and the corrective action taken should be furnished to the contracting officer.

Failure to submit the report within 2 months of the end of the reporting period may result in loss of qualification for the product. In addition to the periodic submission of inspection data, the contractor shall immediately notify the qualifying activity at any time during the 36-month period that the inspection data indicates failure of the qualified product to meet the requirements of this specification. In the event that no production occurred during the reporting period, a report shall be submitted certifying that the company still has the capabilities and facilities necessary to produce the item. If during two consecutive reporting periods, there has been no production, the manufacturer may be required at the discretion of the qualifying activity, to submit fuseholders of each type to testing in accordance with the qualification inspection requirements.

4.5 Quality conformance inspection. Quality conformance inspection shall consist of the tests and examination specified in 4.5.1 through 4.5.5 (see 6.3).

4.5.1 Indicating fuseholders. For indicating fuseholders, all lamp circuit assemblies shall be inspected for a blown fuse indication either during the manufacturing process or prior to delivery. Any convenient voltage that will cause the lamp to illuminate may be used.

4.5.2 Inspection lot. An inspection lot shall consist of all fuseholders of the same type, produced under essentially the same conditions, and offered for inspection at one time. The lot may include the entire contract quantity, or it may be the production of any convenient time period.

4.5.3 Group A inspection.

4.5.3.1 Sampling plan for group A inspection. As a minimum, the contractor shall inspect a sample quantity of fuseholders defined herein. Sample size depends on classification of the characteristic as shown in table III. The sample size for each characteristic is shown in table IV below. If one or more defects is found in any sample, the entire lot shall be rejected and screened 100% by the contractor for the defect found.

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Table IV. *Sampling for Group A Inspection.*

Lot size	Critical characteristic	Major characteristic	Minor characteristic
2 to 8	All	All	3
9 to 15	All	All	3
16 to 25	All	20	3
26 to 50	All	20	5
51 to 90	All	20	6
91 to 150	125	20	7
151 to 280	125	20	10
281 to 500	125	47	11
501 to 1200	125	47	15
1201 to 3200	125	53	18
3201 to 10000	192	68	22
10001 to 35000	294	77	29
35001 to 150000	294	96	29

4.5.3.2 Test routine. All fuseholders in a sample shall be subjected to the tests specified in table V in the order shown.

TABLE V. *Group A inspection.*

Examination or test	Requirement	Test method
Visual and mechanical examination including inspection for all defects listed in table V	3.1	4.6.2
Dielectric withstanding voltage	3.5.4	4.6.4

4.5.3.3 Classification of defects. Defects shall be classified as specified in table III.

4.5.4 Group B inspection.

4.5.4.1 Sampling for Group B inspection. A sample quantity of fuseholders shall be selected and inspected in accordance with 4.5.3.1.

4.5.4.2 Test routine. All fuseholders in a sample shall be subjected to the tests specified in table VI in the order shown.

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TABLE VI. *Group B inspection.*

Examination or test	Requirement	Test method
Enclosure (sealed types only)	3.5.1	4.6.16
Contact resistance	3.5.7	4.6.7
Insulation resistance	3.5.6	4.6.6

4.5.4.3 Disposition of sample units. Sample units which have passed the group B inspection may be delivered on the contract.

4.5.5 Group C inspection.

4.5.5.1 Sampling for Group C inspection. Two sample fuseholders of each type shall be randomly selected for group C inspection at the end of each 36-month period following qualification approval. In the event the contractor has had no production of a fuseholder type in the 36-month period, samples shall be selected from the first production following this period. Table II, pertaining to extension of qualification approval, is not applicable to group C sampling; however, where a fuseholder type provides several discrete voltage ratings, the two test samples may be selected from any of the ratings.

4.5.5.2 Test routine. Group C inspection shall be conducted as specified in table VII in the order shown.

TABLE VII. *Group C inspection.*

Examination or test	Requirement	Test method
Group I – one sample		
Enclosure (sealed types only)	3.5.1	4.6.16
Contact resistance	3.5.7	4.6.7
Terminal strength	3.5.2	4.6.3
Solderability	3.4.9	4.6.21
Endurance	3.5.9	4.6.9
Dielectric withstanding voltage	3.5.4	4.6.4
Group II – one sample		
Vibration	3.5.13	4.6.13
Voltage drop (when specified)	3.5.18	4.6.20
Mechanical shock	3.5.14	4.6.14
Salt spray (corrosion)	3.5.17	4.6.18
Torque strength of inserts threaded terminals and molded threads	3.5.3	4.6.19
Indicating lamp (as for group A tests)	3.5.12	4.6.12
Dielectric withstanding voltage	3.5.4	4.6.4

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4.5.5.3 Disposition of sample units. Sample units which have been subjected to group C inspection shall not be delivered on the contract or order.

4.6 Methods of examination and tests.

4.6.1 Preparation of samples. For all tests requiring passage of current with fuses inserted, the fuseholders shall be provided with one conductor on each terminal. The conductors shall have a length of 24 ± 2 inches and shall have a current rating equal to the maximum current rating of the fuseholder. During shock and vibration tests, the leads shall be secured to the fuseholder mounting plate approximately 6 inches from the fuseholder.

4.6.2 Visual and mechanical examination. Fuseholders shall be examined to verify that the materials, construction, physical dimensions, marking, and workmanship are as specified herein (see 3.1).

4.6.3 Terminal strength. Fuseholders shall be secured by their normal mounting means on a 1/16-inch thick panel and shall be tested in accordance with MIL-STD-202, method 211, condition A, except as specified in 4.6.3.1 and 4.6.3.2 (see 3.5.2).

4.6.3.1 Solder-lug terminals. Solder-lug terminals for line and load wire connections shall be subjected to a 5-pound pull in each of the three mutually perpendicular directions for at least 1 minute.

4.6.3.2 Stud and screw lug terminals. Stud and screw lug terminals shall be subjected for at least 1 minute to the specified pull, directly away from the fuseholder body, in each of the following directions (see 3.1):

a. Parallel to the long axis of the terminal
b. Perpendicular to the long axis of the terminal.

4.6.4 Dielectric withstanding voltage. Fuseholders shall be tested in accordance with method 301 of MIL-STD-202 (see 3.5.4). The following details shall apply.

a. Mounting – Fuseholders shall be mounted in the specified mounting holes on an uninsulated metal panel of the maximum specified thickness and with all specified mounting hardware and gaskets.

b. A test fuse (see 3.1 and 4.1.1.1) with open fuse element shall be assembled in the fuseholder.

c. Test voltage – The test voltage shall be alternating (60 hertz (Hz)) and shall be twice the fuseholder voltage rating plus 1,000 V.

d. Points of application – Test voltage shall be applied between all mutually insulated parts, current-carrying parts, and exposed or grounded parts including mounting panel.

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e. Measurements and examination – Current flow between points of voltage application shall be measured. After the test, fuseholders shall be examined for evidence of arcing, flashover, breakdown of insulation, or other damage.

4.6.5 Dielectric withstanding voltage (reduced barometric pressure) (see 3.5.5). Fuseholders shall be tested in accordance with method 105 of MIL-STD-202. The following details and exceptions shall apply:

a. Test condition letter – C
b. Test voltage – The test voltage shall be as specified (see 3.1).
c. Mounting – As specified in 4.6.4(a) and 4.6.4(b)
d. Measurements and examination – As specified in 4.6.4(d) and 4.6.4(e).

4.6.6 Insulation resistance (see 3.5.6). Fuseholders shall be tested in accordance with method 302 of MIL-STD-202. The following details shall apply:

a. Test condition letter – A
b. Points of measurement – Between mutually insulated parts
c. Caps of indicating fuseholders shall be removed and only the fuseholder bodies tested.

4.6.7 Contact resistance (see 3.5.7). The contact resistance between the fuseholder terminals with an appropriate copper dummy fuse shall be measured in accordance with method 307 of MIL-STD-202. The following details shall apply:

a. Test current – 1 ampere

b. Maximum open circuit test voltage – 3 V direct current (dc)

c. Fuseholders with axial, contact pressure springs in the caps shall be fitted with a copper dummy fuse having maximum ferrule diameter and minimum overall length. The fuse shall be inserted into the cap so as to fully depress the spring. Insertion force shall be released gradually, allowing the fuse to reposition in the cap by spring force only. The cap, with fuse, shall then be assembled to the fuseholder body.

4.6.8 Overload. With an appropriate copper dummy fuse, the fuseholder shall be subjected to a current equal to 150 percent of the maximum fuse rating which the fuseholder accommodates. The test current shall be applied continuously for a period of 1 hour. All sections of multisection fuseholders shall be tested simultaneously (see 3.5.8).

4.6.9 Endurance. With an appropriate copper dummy fuse in the fuseholder cap, the fuseholder cap shall be inserted in the fuseholder and then removed for a total of 500 operations. Operation is defined as insertion of the dummy fuse and cap within the fuseholder body, locking in place, unlocking, and withdrawal of the dummy fuse and fuseholder cap. The fuseholder shall not be energized during this test. Only one section of a multisection fuseholder shall be tested (see 3.5.9).

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4.6.9.1 Insertion and withdrawal test. Where the fuse is retained in pressure or spring clips in the fuseholder cap or body, the fuse shall be inserted in the clips and removed for a total of 500 operations. One operation is defined as the insertion and removal of the fuse. This test may be performed independently or as part of the operational sequence of 4.6.9.

4.6.9.2 Performance after endurance test. Upon completion of the tests in 4.6.9 or both 4.6.9 and 4.6.9.1, contact resistance shall be measured in accordance with 4.6.7.

4.6.10 Temperature rise. A test fuse shall be inserted in the fuseholder, and a thermocouple of No. 28 to No. 32 AWG shall be placed on each fuseholder terminal as close to the fuseholder body as practicable. The fuseholder shall be energized at the maximum current rating of the fuse and at any voltage within the fuseholder rating. Temperature rise shall be measured when a constant temperature has been reached, as indicated by three successive readings taken at 10 minute intervals and differing by not more than plus or minus 1 °C. All sections of multisection fuseholders shall be tested simultaneously (see 3.5.10). Accuracy of the indicating device shall be within plus or minus 2 °C.

4.6.11 Short circuit. A test fuse as specified (see 3.1), shall be assembled in the fuseholder. The fuseholder shall be inserted in a single-phase circuit and subjected to the short circuit test in accordance with MIL-F-15160 or MIL-F-23419, as applicable, for the test fuse. Only one section of a multisection fuseholder need be tested.

4.6.12 Indicating lamp. With the fuseholder energized at maximum rated voltage, the indicating lamp shall properly indicate a "blown" fuse for 100 hours. Observations shall be made from a distance of 10 feet in any direction up to 45 degrees from the mounting axis of the fuseholder and in an ambient illumination of 50 foot-candles. For groups A and C examination and tests, fuseholders shall be energized at highest and lowest voltages only long enough to show that the "blown fuse" indicator circuit is operating. For group C tests, the indicating lamp test shall be conducted on samples previously submitted to the shock and vibration tests. A "blown fuse" may be assembled into the fuseholder if necessary to complete the indicating circuit (see 3.5.12).

4.6.13 Vibration (see 3.5.13). Unless otherwise specified (see 3.1), fuseholders shall be tested in accordance with method 201 of MIL-STD-202. The following details shall apply:

a. Fuseholder shall be assembled with a test fuse.

b. The fuseholder shall be rigidly mounted by its normal mounting means.

c. Monitor with either circuit specified in method 310 of MIL-STD-202 or with an equivalent circuit capable of indicating a 10 µs opening of contacts. All fuseholders vibrated simultaneously may be connected in series and monitored simultaneously. In the event of opening of contacts in excess of 10 µs fuseholders shall be removed from the circuit until the defective one is found and removed. All others shall be reinserted and the test continued.

d. Fuses which open during this test shall be replaced and the test continued.

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4.6.14 Mechanical shock (see 3.5.14). Fuseholders shall be tested in accordance with method I (see 4.6.14.1) or method II (see 4.6.14.2), as specified (see 3.1). Contact opening shall be monitored with a relay calibrated to drop on a 0.020-second interruption to its coil supply or by an equivalent timing device.

4.6.14.1 Method I. Fuseholders shall be tested in accordance with method 207 of MIL-STD-202. The following details shall apply:

a. Mounting fixture shall be in accordance with figure 207-4A of MIL-STD-202.

b. Fuseholders shall be assembled with test fuses and shall be energized with any voltage and current within their rating.

c. Each fuseholder shall be monitored to note any opening or chatter of contacts.

d. Fuses which open during this test shall be replaced and the test continued.

4.6.14.2 Method II. The fuseholders shall be tested in accordance with method 213 of MIL-STD-202. The following details shall apply:

a. Test condition I shall apply except that nominal duration shall be 10 ± 2 ms.

b. Fuseholders shall be mounted by their normal mounting means.

c. Fuseholders shall be assembled with test fuses and shall be energized with any voltage and current within their rating.

d. Each fuseholder shall be monitored to note any opening or chatter of contacts.

e. Fuses which open during this test shall be replaced and the test continued.

4.6.15 Moisture resistance (see 3.5.15). The fuseholder shall be tested in accordance with method 106 of MIL-STD-202. The following details and exceptions shall apply:

a. A test fuse with open fuse element shall be installed if required to effect proper seal between fuseholder cap and body.

b. Mounting – by normal means on a corrosion-resistant metal panel positioned 15 degrees from the vertical.

c. Polarization – During steps 1 to 6 inclusive, a dc potential of 100 V shall be applied between current-carrying parts and mounting hardware. Negative polarity shall be applied to mounting panel.

d. Vibration, step 7b, shall be omitted.

e. Final measurements – During tenth cycle, insulation resistance measurements shall be made as specified in 4.5.6. Following a 24-hour period at 23 ± 1 °C and 50 ± 5 percent RH, insulation resistance and contact resistance shall be measured as specified in 4.6.6 and 4.6.7, respectively.

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4.6.16 Enclosure (see 3.5.1). In tests requiring a fuseholder to be mounted, the mounting panel thickness shall not exceed the maximum specified (see 3.1). Screw type caps shall be hand tight.

4.6.16.1 Unsealed. No test required.

4.6.16.2 Dripproof. The fuseholder containing a test fuse shall be mounted, with fuseholder cap exposed, on one face of a watertight enclosure. The test shall be made in accordance with the accelerated dripproof test for parts as specified in MIL-STD-108. The water flow through a domestic type shower head shall be not less than 2 gallons per minute (g/min).

4.6.16.3 Splashproof. The fuseholder containing a test fuse shall be mounted, with fuseholder cap exposed, on one face of a watertight enclosure. The test shall be made in accordance with MIL-STD-108 (see 3.5.1.3).

4.6.16.4 Watertight. The fuseholder containing a test fuse shall be mounted, with fuseholder cap exposed, on one face of a watertight enclosure. The test shall be made in accordance with MIL-STD-108 (see 3.5.1.4).

4.6.16.5 Watertight and body sealed. The fuseholder shall be subjected to the watertight test as specified in 4.6.16.4. The fuseholder shall then be removed from the test panel and the cap removed from the body. A cap which has been drilled through the metal insert at the test probe hole and fitted with a sealed tube for adaption to a source of compressed air shall then be assembled to the fuseholder body. The complete fuseholder shall then be immersed in fluid such as tap water, and a differential of 15 pounds per square inch (lb/in^2) gauge be applied for a period of 1 minute. No air bubbles shall appear (see 3.5.1.5).

4.6.17 Thermal shock (see 3.5.16). Fuseholders shall be tested in accordance with method 107 of MIL-STD-202. The following details and exceptions shall apply:

a. Test condition letter – A, except as otherwise specified (see 3.1)

b. Measurements after cycling – Fuseholders shall be examined for evidence of physical damage.

4.6.18 Salt spray (corrosion) (see 3.5.17). Fuseholders shall be tested in accordance with method 101 of MIL-STD-202. The following details and exceptions shall apply:

a. Test conditions letter – A or B, as specified (see 3.1)

b. Special mounting and details – Test fuses shall be assembled into each fuseholder if required to effect proper seal between fuseholder cap and body.

After the test, fuseholders shall be visually examined for evidence of corrosion or mechanical damage.

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4.6.19 Torque strength of inserts, threaded terminals, and molded threads.

4.6.19.1 Fuseholder caps. Fuseholder caps containing molded-in threaded metal inserts for attachment to fuseholder bodies shall be assembled to the fuseholder body and subjected to the specified torque (see 3.1 and 3.5.3).

4.6.19.2 Threaded terminals. The specified torque shall be applied to each terminal screw and to a nut on each terminal stud (see 3.1 and 3.5.3).

4.6.19.3 Mounting. Single mounting hole fuseholders with required mounting hardware shall be mounted on a 1/16-inch thick metal panel and the specified torque shall be applied to the mounting nut (see 3.1 and 3.5.3.).

4.6.20 Voltage drop. The fuseholders shall be fitted with a test fuse. Voltage drop between the fuseholder terminals shall be measured while the fuseholder is carrying maximum rated current and undergoing vibration in accordance with method 514.2, procedure IA of MIL-STD-810 for category B2 equipment (see 3.5.18).

4.6.21 Solder-lug terminals. Solder-lug terminals shall be tested in accordance with method 208 of MIL-STD-202 (see 3.4.9) for solderability.

4.6.22 Inspection of packaging. Sample packages and packs, and the inspection of the preservation, packing and marking for shipment and storage shall be in accordance with the requirements of section 5 and the documents specified therein.

5. PACKAGING

(The packaging requirements specified herein apply only for direct Government acquisitions.

5.1 Preservation. Preservation shall be level A or C, as specified (see 6.2).

5.1.1 Level A.

5.1.1.1 Cleaning. Fuseholders shall be cleaned in accordance with MIL-P-116, process C-1.

5.1.1.2 Drying. Fuseholders shall be dried by one or more of the procedures outlined in MIL-P-116. The procedure used shall not be injurious to the item.

5.1.1.3 Preservative application. None required.

5.1.1.4 Unit packaging. Fuseholders shall be packaged in a manner to insure compliance with the general (methods of preservation) and physical protection paragraphs of MIL-P-116. Units shall be individually packaged in accordance with MIL-P-116, method IC-3, with transparent material or as specified in the contract or order.

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5.1.1.5 Intermediate packaging. Fuseholders, packaged as described in 5.1.1.4, shall be placed in intermediate containers conforming to PPP-B-566 or PPP-B-676. Intermediate containers shall be uniform in size and shape, shall be of minimum tare and cube, and shall contain multiples of five unit packages, not to exceed 100 packages or 10 pounds. No intermediate packaging is required when the total quantity shipped to a single destination is less than 100 units.

5.1.2 Level C. Fuseholders shall be preserved and packed in a manner that will afford adequate protection against corrosion, deterioration, and physical damage during shipment from supply source to the first receiving activity for immediate use. This package may conform to the contractor's commercial practice for retail distribution when it meets the requirements of this level.

5.2 Packing. Packing shall be level A, B, or C, as specified (see 6.2).

5.2.1 Level A. The fuseholders shall be packed in fiberboard containers conforming to PPP-B-636, weather resistant, style optional, special requirement. Fiberboard boxes shall be closed and waterproofed in accordance with the appendix to the box specification with method V closure applicable. Reinforcing shall be accomplished by the use of non-metallic banding or pressure-sensitive reinforced tape at the contractor's option.

5.2.2 Level B. The fuseholders shall be packed in fiberboard containers conforming to PPP-B-636, class domestic, style and use requirements optional. Closure shall be in accordance with the appendix thereto.

5.2.3 Level C. The fuseholders shall be packed in a manner that will afford adequate protection against damage during direct shipment from the supply source to the first receiving activity. This pack shall conform to the applicable carrier rules and regulations and may be the contractor's commercial practice when it conforms to the requirements of this level.

5.3 Unitized loads. Unitized loads may be utilized, at the option of the contractor, commensurate with the level of packing specified (see 6.2).

5.3.1 Level A. Fuseholders, packed as specified in 5.2.1, shall be packed on a pallet, load type 1, conforming to MIL-STD-147. A fiberboard cap shall be employed over the load, having two sides extending down the stacked load at least 12 inches to accommodate marking requirements. The cap shall be PPP-F-320, class weather resistant, type SF, grade W5s fiberboard. The load shall be "bonded" to the pallet.

5.3.2 Level B. Fuseholders, packed as specified in 5.2.2, shall be packed as cited in level A, except fiberboard caps shall be class domestic.

5.3.3 Level C. Fuseholders, packed as specified in 5.2.3, shall be packed as cited in level A, except that pallets and caps shall be of the type, size and kind commonly used for the purpose and shall comply with the rules and regulations of the common carriers as applicable to the mode of transportation.

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5.4 Marking. In addition to any special marking required (see 6.2), each unit pack, intermediate and exterior container shall be marked in accordance with MIL-STD-129 and table V to MIL-P-116.

5.5 General. Exterior containers shall be of a minimum tare and cube consistent with the protection required and shall contain equal quantities of identical items to the greatest extent possible.

6. NOTES

(This section contains information of a general or explanatory nature that may be helpful, but is not mandatory.)

6.1 Intended use. Extractor post type fuseholders are used to fully enclose electrical fuses and are designed for panel mounting.

6.2 Acquisition requirements. Acquisition documents must specify the following:

a. Title, number, and date of this specification

b. Issue of DODISS to be cited in the solicitation, and if required, the specific issue of individual documents referenced (see 2.1.1 and 2.2)

c. When tests are required (see 4.6)

d. Title, number, and date of applicable specification sheet and complete type designation or part number when applicable (see 3.1)

e. Mounting hardware (see 3.4.6)

f. Level of preservation, packing, and marking (see section 5).

6.3 Consideration of data requirements. The following data requirements should be considered when this specification is applied on a contract. The applicable Data Item Descriptions (DID's) should be reviewed in conjunction with the specific acquisition to ensure that only essential data are requested/provided and that the DID's are tailored to reflect the requirements of the specific acquisition. To ensure correct contractual application of the data requirements, a Contract Data Requirements List (DD Form 1423) must be prepared to obtain the data, except where DOD FAR Supplement 27.475-1 exempts the requirement for a DD Form 1423.

Reference Paragraph	DID Number	DID Title	Suggested Tailoring
4.5	DI-T-2072	Reports, Test	–

The above DID's were those cleared as of the date of this specification. The current issue of DOD 5010.12-L, Acquisition Management Systems and Data Requirements Control List (AMSDL), must be researched to ensure that only current, cleared DID's are cited on the DD Form 1423.

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6.3.1 Submission of tested samples. Unless otherwise specified, tested items should be furnished to the activity responsible for qualification (see 6.4). The items should be identified to indicate the inspection and tests to which each was subjected.

6.4 Qualification. With respect to products requiring qualification, awards will be made only for products which are, at the time of award of contract, qualified for inclusion in Qualified Products List QPL No. 19207 whether or not such products have actually been so listed by that date. The attention of the contractors is called to these requirements, and manufacturers are urged to arrange to have the products that they propose to offer to the Federal Government tested for qualification in order that they may be eligible to be awarded contracts or purchase orders for the products covered by this specification. The activity responsible for the Qualified Products List is the Naval Sea Systems Command, SEA 5122, Department of the Navy, Washington, DC 20362-5101 and information pertaining to qualification of products may be obtained from that activity. Application for qualification tests must be made in accordance with "Provisions Governing Qualification SD-6" (see 6.4.1).

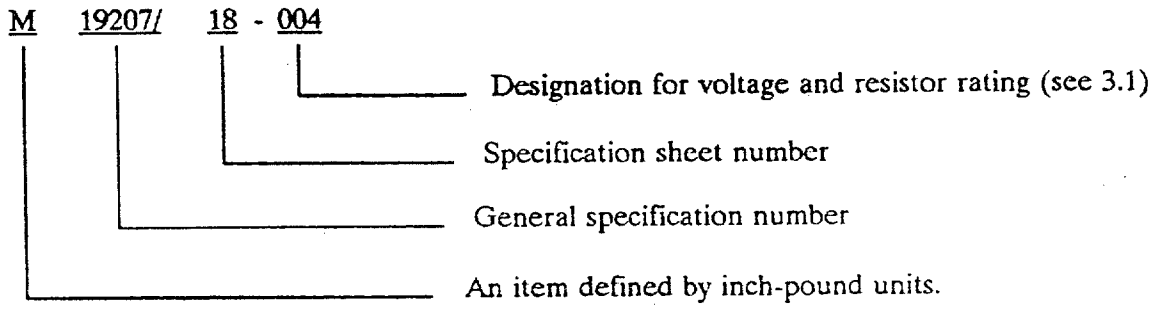
6.4.1 Copies of "Provisions Governing Qualification SD-6" may be obtained upon application to the Standardization Documents Order Desk, Building 4D, 700 Robbins Avenue, Philadelphia, PA 19111-5094.

6.5 Circuit design. Fusing circuits using extractor post fuseholders should have a fuse current rating of approximately 120 percent of the circuit current rating. Ordinarily this will provide adequate protection and will avoid needless blowing of fuses.

6.6 Types FHL10U and FHL29G. The types FHL10U and FHL29G fuseholders are dual fuseholders which may be mounted tandem with types FHL11U or FHL30G fuseholders respectively, for banks of fuseholders requiring an odd number of fuse carriers.

6.7 Sub-contracted material and parts. The packaging requirements of referenced documents listed in section 2 do not apply when material and parts are acquired by the contractor for incorporation into the equipment and lose their separate identity when the equipment is shipped.

6.8 Part or Identifying Number (PIN). The PIN to be used for fuseholders acquired to this specification are created as follows (where applicable):



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6.8.1 Type designation. The type designation should be in the following form:

FH	L	17	G	I
Component	Characteristic (see 1.2.1)	Construction (see 1.2.2)	Enclosure (see 1.2.3)	Style (see 1.2.4)

The component is identified by the two-letter symbol "FH" and covers all fuse-holders under this specification.

6.9 Subject term (key word) listing.

Dripproof
Fuseclip
Gasket, O-ring
Resistor
Surfaces, metallic, mating
Surfaces, metallic, non-mating

6.10 Changes from previous issue. Marginal notations are not used in this revision to identify changes with respect to the previous issue due to the extensiveness of the changes.

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Custodians:
Army – ER
Navy – SH
Air Force – 85

Review activities:
Army – AR, MI, ME
Navy – OS, EC
Air Force – 11, 17, 70, 71, 80, 82, 84

User activities:
Army – AT,
Navy – MC, AS
Air Force – 19, 99

Preparing activity:
Navy – SH
(Project 5920-0459)

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STANDARDIZATION DOCUMENT IMPROVEMENT PROPOSAL

INSTRUCTIONS

1. The preparing activity must complete blocks 1, 2, 3, and 8. In block 1, both the document number and revision letter should be given.
2. The submitter of this form must complete blocks 4, 5, 6, and 7.
3. The preparing activity must provide a reply within 30 days from receipt of the form.

NOTE: This form may not be used to request copies of documents, nor to request waivers, or clarification of requirements on current contracts. Comments submitted on this form do not constitute or imply authorization to waive any portion of the referenced document(s) or to amend contractual requirements.

I RECOMMEND A CHANGE:

1. DOCUMENT NUMBER: MIL-F-19207D
2. DOCUMENT DATE (YYMMDD): 23 AUGUST 1991
3. DOCUMENT TITLE: FUSEHOLDERS, EXTRACTOR POST TYPE, BLOWN FUSE INDICATING AND NON-INDICATING, GENERAL SPEC
4. NATURE OF CHANGE (Identify paragraph number and include proposed rewrite, if possible. Attach extra sheets as needed.)

5. REASON FOR RECOMMENDATION

6. SUBMITTER

a. NAME (Last, First, Middle Initial)

b. ORGANIZATION

c. ADDRESS (Include Zip Code)

d. TELEPHONE (Include Area Code)
(1) Commercial
(2) AUTOVON (If applicable)

7. DATE SUBMITTED (YYMMDD)

8. PREPARING ACTIVITY

a. NAME Technical Point of Contact (TPOC):
Mr. Chieu Mai (SEA 06K312)
PLEASE ADDRESS ALL CORRESPONDENCE AS FOLLOWS:

b. TELEPHONE (Include Area Code)
(1) Commercial: TPOC: 703-602-2011
(2) AUTOVON: 8-332-2011

c. ADDRESS (Include Zip Code)
COMMANDER, NAVAL SEA SYSTEMS COMMAND
DEPARTMENT OF THE NAVY (SEA 55Z3)
WASHINGTON, DC 20362-5101

IF YOU DO NOT RECEIVE A REPLY WITHIN 45 DAYS, CONTACT:
Defense Quality and Standardization Office
5203 Leesburg Pike, Suite 1403, Falls Church, VA 22041-3466
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