

W-E-00661B (GSA-FSS)
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SUPERSEDING
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INTERIM FEDERAL SPECIFICATION

ERASER, ELECTRIC

This Interim Federal Specification was developed by the Standardization Division, Federal Supply Service, General Services Administration, Washington, D. C. 20406, based upon currently available technical information. It is recommended that Federal agencies use it in procurement and forward recommendations for changes to the preparing activity at the address shown above.

1 SCOPE AND CLASSIFICATION

1.1 Scope. This specification covers electric erasers designed to erase pencil and ink markings from paper and cloth surfaces.

1.2 Classification. The electric erasers shall be of the following types, classes, and uses, as specified (see 6.1):

Type I - Light duty.
Type II - Heavy duty.

Class 1 - Without radio interference suppression.
Class 2 - With radio interference suppression.

Use 1 - Land use.
Use 2 - Shipboard use.

2. APPLICABLE DOCUMENTS

2.1 The following documents of the issue in effect on date of invitation for bids or request for proposal, form a part of this specification to the extent specified herein.

Federal Specifications:

PPP-B-566 - Boxes, Folding Paperboard.
PPP-B-636 - Box, Fiberboard
PPP-B-676 - Boxes, Setup.
PPP-T-45 - Tape, Gummed, Paper, Reinforced and Plain, for Sealing and Securing.
PPP-T-97 - Tape; Pressure-Sensitive Adhesive, Filament Reinforced.

Federal Standards:

Fed. Std. No. 123 - Marking for Domestic Shipment (Civilian Agencies).

(Activities outside the Federal Government may obtain copies of Federal Specifications, Standards, and Handbooks as outlined under General Information in the Index of Federal Specifications and Standards and at the prices indicated in the Index. The Index, which includes cumulative monthly supplements as issued, is for sale on a subscription basis by the Superintendent of Documents, U. S. Government Printing Office, Washington, D. C. 20402.

(Single copies of this specification and other Federal Specifications required by activities outside the Federal Government for bidding purposes are available without charge from the Business Service Centers at the General Services Administration Regional Offices in Boston, New York, Washington, D. C., Atlanta, Chicago, Kansas City, Mo., Fort Worth, Denver, San Francisco, Los Angeles, and Seattle, Washington.

(Federal Government activities may obtain copies of Federal Specifications, Standards, and Handbooks and the Index of Federal Specifications and Standards from established distribution points in their agencies.)

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Military Specifications:

MIL-P-116 - Preservation, Methods of.

Military Standards:

MIL-STD-105 - Sampling Procedures and Tables for Inspection by Attributes.

MIL-STD-129 - Marking for Shipment and Storage.

MIL-STD-461 - Electromagnetic Interference Characteristics Requirements for Equipment.

MIL-STD-462 - Electromagnetic Interference Characteristics, Measurement of.

MIL-STD-463 - Definitions and System of Units, Electromagnetic Interference Technology.

(Copies of Military Specifications and Standards required by contractors in connection with specific procurement functions should be obtained from the procuring activity or as directed by the contracting officer.)

2.2 Other Publications. The following document forms a part of this specification 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.

Underwriters' Laboratories Publication:

UL-73 - Motor-Operated Appliances.

(Application for copies should be addressed to Underwriters' Laboratories, Incorporated, 1285 Walt Whitman Road, Melville, New York 11749; 207 East Ohio Street, Chicago, Illinois 60611; or 1655 Scott Boulevard, Santa Clara, California 95050.)

3. REQUIREMENTS

3.1 Preproduction sample. When specified, before production is commenced, a sample erasing machine shall be submitted (see 4.2 and 6.1).

3.2 Standard Product. Erasing machines delivered under this specification shall be the manufacturer's standard product, except for any modifications specified herein.

3.3 Materials.

3.3.1 Housing. The machine housing for use 1 (land use) machines shall be corrosion resistant steel; die-cast aluminum; or non-conducting, high-impact, thermoplastic or thermosetting plastic. Machine housing for use 2 (shipboard use) machines shall be non-conducting, high-impact, thermoplastic or thermosetting plastic.

3.3.2 Chuck. The chuck shall be of corrosion resistant metal, or nickel-or chromium-plated, ferrous metal.

3.4 Fire and casualty hazards. Each contractor shall submit to the contracting agency proof that the electric eraser he proposes to supply under this specification conforms to the requirements of the Underwriters' Laboratories, Inc., Safety Standard UL73. The label, or listing with reexamination, of the Underwriters' Laboratories, Inc., may be accepted as evidence that the electric eraser conforms to this requirement. In lieu of the label, or listing with reexamination, the contractor may submit independent proof, satisfactory to the contracting agency, that the electric eraser conforms to the applicable requirements of the published standards including methods of the tests of the Underwriters' Laboratories UL 73.

3.5 Design and construction. The electric eraser shall be designed to be easily operated with one hand and shall operate without excessive noise. Electric eraser shall be designed to operate on a 60-cycle A. C. 115 volt (\pm 10 percent) power source and shall weigh not more than 26 ounces without power cord. Electric motor bearings shall be corrosion resistant, dustproof, and self-lubricating. The eraser chuck shall be designed to grip erasers securely at any intermediate point of their length and shall be designed to permit easy removal and insertion of erasers.

3.5.1 Switch. Use 1 machine shall have a switch of the momentary-contact type which automatically disconnects when the finger is removed. The switch shall be located so that it can be easily operated with the same hand which is holding the machine. The switch for the use 2 machine may be of this same type or of the mercury-tilting type which activates the instrument as a result of positioning the appliance in working position.

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3.5.2 Power cord. The flexible power cord and plug shall have a minimum voltage capacity of 115 volts, and shall have a current carrying capacity of not less than the current rating of the electric eraser. The cord shall be not less than 7 feet in length. The cord for use 1 machine shall be 2- or 3-conductor. When 3-conductor, the cord shall be equipped with a 3-prong grounding plug connector attached to one end. The third conductor shall ground all exposed metal parts of the machine. The cord for use 2 machine shall be 3-conductor, only, as described above. The conductors, cord, and plug of all power cords shall be rubber or thermoplastic insulated.

3.5.3 Rubber erasers. An assortment of at least 30 linear inches of rubber erasers shall be furnished with each machine. Half of the erasers shall be suitable for erasing ink markings, and the balance, suitable for erasing pencil markings. Each eraser shall be 0.27 ± 0.03 inch in diameter and not less than $3/4$ inch in length, and shall adequately fit the eraser chuck.

3.6 Repair parts. The successful bidders supplying electric erasers covered by this specification shall make available, and shall furnish, repair parts when requested.

3.7 Performance characteristics.

3.7.1 Switch life. There shall be no failure of the switch when tested as specified in 4.3.3.1. At the conclusion of the test the switch shall continue to function normally.

3.7.2 Temperature rise. The temperature increase of the machine housing shall not exceed 40°F. when tested in accordance with 4.3.3.2.1, or 4.3.3.2.2, as applicable.

3.8 Radio interference suppression. Class 2 electric erasers shall be in accordance with MIL-STD-461, class IIB; MIL-STD-462; and MIL-STD-463.

3.9 Markings. The erasing machine shall be legibly and permanently marked with the manufacturer's name or trademark, a distinctive catalog number or the equivalent, and the voltage, frequency, and input in amperes or watts.

3.10 Workmanship. The electric eraser shall be free from cold bonds, delaminations, porosity, warpage, dents, cracks, checks, chips, burrs, blisters, sharp edges, faulty construction, or any other defect which affects appearance or serviceability, or which constitutes a personal hazard.

4. QUALITY ASSURANCE PROVISIONS

4.1 Responsibility for inspection. Unless otherwise specified in the contract or purchase order, the supplier is responsible for the performance of all inspection requirements as specified herein. Except as otherwise specified, the supplier may utilize his own facilities or any commercial laboratory acceptable to the Government. The Government reserves the right to perform any of the inspections set forth in the specification where such inspections are deemed necessary to assure that supplies and services conform to prescribed requirements.

4.2 Preproduction sample. Preproduction samples submitted in accordance with 3.1 will be examined for compliance with all the requirements and inspections of this specification.

4.3 Sampling and inspection.

4.3.1 Inspection of end item. Sample erasing machines, with rubber eraser assortments, shall be examined for defects listed in table I. Insert a rubber eraser, operate the machine, and remove rubber eraser in conjunction with this examination. Sampling shall be in accordance with MIL-STD-105, inspection level S-3, with an acceptable quality level (AQL) of 4.0 defects per hundred units. The sample unit (unit of product) shall be one erasing machine, with rubber eraser assortment, and the lot size shall be all erasing machines of one type, class, and use, offered for acceptance at one time.

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TABLE I. Inspection for end item defects

Examine	Defects
Type, class, and use	Not as specified (see 6.1).
Materials	Housing not as specified in 3.3.1; chuck not of corrosion-resistant metal, or not nickel or chromium plated.
Fire and casualty hazards	Not as specified in 3.4.
Design and construction:	
(a) Erasing machine	Not designed to be easily operated with one hand; makes excessive noise when operated; not designed for use on 60-cycle A.C., 115 volt (\pm 10 percent) power source; weighs more than 26 ounces without power cord.
(b) Chuck	Does not grip eraser at any intermediate point of its length; not designed to permit easy insertion and removal of rubber erasers.
(c) Switch	Does not function properly; not as specified in 3.5.1.
(d) Power cord	Not as specified in 3.5.2.
(e) Rubber erasers	Erasing machine not equipped with at least 30 linear inches of rubber erasers, half of which are suitable for erasing ink markings, and the balance of which are for erasing pencil markings; rubber eraser not 0.27 \pm 0.03 inch in diameter; less than 3/4 inch long; does not fit chuck.
Radio interference suppression (for class 2 only)	Not as specified (see 3.8).
Markings	Machine not legibly and permanently marked with the manufacturer's name or trademark, a distinctive catalog number or the equivalent, and the voltage, frequency, and input in amperes or watts.
Workmanship	Machine not free from cold bonds, delaminations, porosity, warpage, dents, cracks, checks, chips, burrs, blisters, sharp edges, faulty construction, or any other defect which affects appearance or serviceability, or which constitutes a personal hazard.

4.3.2 Inspection of preparation for delivery. An inspection shall be made to determine that the packaging, packing, and marking comply with the requirements in section 5 of this specification. Defects shall be scored in accordance with table II. For examination of interior packaging the sample unit shall be one shipping container fully prepared for delivery, selected at random just prior to the closing operations. Sampling shall be in accordance with MIL-STD-105. Defects of closure listed shall be examined on shipping containers fully prepared for delivery. The lot size shall be the number of shipping containers in the end item inspection lot. The inspection level shall be S-2 with AQL of 4.0 defects per hundred units.

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TABLE II. Classification of preparation for delivery defects

Examine	Defects
Markings (exterior and interior)	Omitted; incorrect; illegible; improper size, location, sequence, or method of application.
Materials	Any component missing or damaged.
Workmanship	Inadequate application of components such as incomplete closure of container flaps, loose strapping, inadequate stapling, or distortion of container.

4.3.3 Tests. Sample erasing machines, with rubber erasers, shall be subjected to the following tests. Sampling for tests shall be in accordance with MIL-STD-105, inspection level S-2, with an AQL of 4.0 defects per hundred units. The sample unit shall be one erasing machine, with rubber eraser assortment, and the lot size shall be all erasing machines of one type, class, and use, offered for acceptance at one time.

4.3.3.1 Switch life. Perform this test in an atmosphere of $73.5 \pm 2^{\circ}\text{F}$. and at a relative humidity of $50\% \pm 4\%$. Forced ventilation may be induced to cool the surface of the machine. The switch shall not be adjusted or lubricated either before or during the test. To test, connect machine to 115 volt power source and operate on and off by activating the switch for 6000 consecutive cycles at a rate of not less than 6 cycles per minute. Check for compliance with 3.7.1.

4.3.3.2 Temperature rise. Perform these tests in a draft-free atmosphere of $73.5 \pm 2^{\circ}\text{F}$. at a relative humidity of $50\% \pm 4\%$. Attach a mercury thermometer (minimum range 0 to 300°F .), or other device suitable for accurate measurement of the housing temperature, to the housing of the machine at a point nearest the chuck. Connect machine to 115 volt power source and then perform test 4.3.3.2.1 or 4.3.3.2.2, as applicable.

4.3.3.2.1 Type I. Record the temperature of the machine housing. Then operate the machine through repeated cycles of four minutes "on" and one minute "off" for a total period of 20 minutes. For the first 10 minutes of this cycling operation insert an ink eraser in the chuck and erase India ink markings. Then insert a pencil eraser in the chuck and for the remaining 10 minutes erase pencil markings of various widths and densities. Determine the temperature increase of the machine housing and check for compliance with 3.7.2.

4.3.3.2.2 Type II. Record the temperature of the machine housing and then operate the machine through repeated cycles of four minutes "on" and one minute "off" for a total period of one hour. For the first 30 minutes use an ink eraser inserted in the chuck and erase India ink markings, and for the remaining 30 minutes use a pencil eraser and erase pencil markings of various widths and densities. Determine the temperature increase of the machine housing and check for compliance with 3.7.2.

5. PREPARATION FOR DELIVERY

5.1 Packaging. Packaging shall be level A, B, or C, as specified (see 6.1).

5.1.1 Level A. Each erasing machine complete with cord and plug and assorted erasers shall be packaged in accordance with method IA-15 of MIL-P-116. The machine shall be cushioned and packaged in a box conforming to PFP-B-566 or PFP-B-676.

5.1.2 Level B. Each erasing machine complete with cord, plug, and assorted erasers shall be packaged in a box conforming to PFP-B-566 or PFP-B-676. Each machine shall be cushioned in a manner as to prevent movement or damage while in transit. Each box shall be secured in such a manner as to prevent accidental opening.

5.1.3 Level C. Electric erasers shall be packaged in accordance with the manufacturer's standard commercial practice.

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5.2 Packing. Packing shall be level A, B, or C, as specified (see 6.1).

5.2.1 Level A. Erasing machines of only one type, class and use, complete with cords, plugs, and assorted erasers, packaged as specified in 5.1, shall be packed in a close-fitting box conforming to FPP-B-636, V3c. Each box shall be closed and reinforced with flat steel strapping or tape banding in accordance with the appendix of the box specification. The weight of contents shall not exceed 65 pounds.

5.2.2 Level B. Unless otherwise specified (see 6.1), fifteen electric erasers of the same class, as specified, packaged in accordance with paragraph 5.1.2, shall be packed in a close-fitting box conforming to FPP-B-636, class domestic, with a minimum bursting strength of 200 p.s.i. Closures shall be in accordance with the appendix to the box specification. Tape used for securing shall conform to FPP-T-45 or FPP-T-97.

5.2.3 Level C. Erasing machines, packaged as specified in 5.1.3, shall be packed in a manner to insure carrier acceptance and safe delivery at destination, at the lowest transportation rate for such supplies. Containers shall be in accordance with rules or regulations of carriers applicable to the mode of transportation.

5.3 Marking.

5.3.1 Civil agencies. In addition to any special marking required in the contract or order, unit and shipping containers shall be marked in accordance with Fed. Std. No. 123.

5.3.2 Military agencies. In addition to any special marking required in the contract or order, unit and shipping containers shall be marked in accordance with MIL-STD-129.

6. NOTES.

6.1 Ordering data. Purchasers should select the preferred options permitted herein and include the following information in procurement documents:

- (a) Title, number, and date of this specification.
- (b) Type, class, and use required (see 1.2.1).
- (c) Whether preproduction sample is required (see 3.1).
- (d) Selection of applicable level of packaging and packing required (see 5.1 and 5.2).