

(METRIC)

PPP-C-795D

June 11, 1994

SUPERSEDING

PPP-C-795C

September 12, 1989

FEDERAL SPECIFICATION

CUSHIONING MATERIAL, PACKAGING (FLEXIBLE CLOSED CELL PLASTIC FILM, FOR LONG DISTRIBUTION CYCLES)

The General Services Administration has authorized the use of this Federal specification, for all Federal agencies.

1. SCOPE AND CLASSIFICATION.

1.1. Scope. This specification establishes requirements for flexible, closed cell, heat sealable, non-corrosive, plastic film for use in cushioning and packaging applications. (See 6.1).

1.2. Classification.

1.2.1. Classes. The cushioning material shall be of the following classes, as specified.

Class 1 - Regular

Class 2 - Static dissipative

Class 3 - Self extinguishing and static dissipative

2. APPLICABLE DOCUMENTS.

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

Code Of Federal Regulations:

29 CFR Labor

Beneficial comments, recommendations, additions, deletions, clarifications, etc. and any data which may improve this document, should be sent to: General Services Administration, Federal Supply Service, 26 Federal Plaza, New York N.Y. 10278
ATTN: Engineering Branch (2FYEE).

DISTRIBUTION STATEMENT A: Approved for
public release; distribution is unlimited.

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Federal Specifications:

- QQ-A-250/4 - Aluminum Alloy 2024, Plate and Sheet
- QQ-C-502 - Copper Rods and Shapes; and Flat Products with Finished Edges (Flat Wire Strips, and Bars)
- QQ-S-365 - Silver Plating, Electrodeposited, (General Requirements For)
- UU-P-268 - Paper, Kraft, Wrapping
- PPP-B-1055 - Barrier Material, Waterproofed, Flexible
- PPP-F-320 - Fiberboard, Corrugated and Solid, Sheet Stock (Container Grade) and Cut Shapes
- PPP-T-60 - Tape, Packaging, Waterproofed
- PPP-T-76 - Tape, Pressure Sensitive Adhesive, Packaging/Paper (For Carton Sealing)

Federal Standards:

- FED-STD-101 - Test Procedures for Packaging Materials
- FED-STD-313 - Material Safety Data, Transportation Data and Disposal Data For Hazardous Materials Furnished To Government Activities.

Copies of Federal specifications, standards, and commercial item descriptions may be obtained through the Congressional Sales Office, U.S. Government Printing Office, Washington, DC 20402.

Single copies of this specification, and other Federal specifications and commercial item descriptions required by activities outside the Federal Government for bidding purposes are available without charge from General Services Administration Business Service Centers in Boston, MA; New York, NY; Philadelphia, PA; Washington, DC; Atlanta, GA; Chicago, IL; Kansas City, MO; Fort Worth, TX; Houston, TX; Denver, CO; San Francisco, CA; Los Angeles, CA; and Seattle, WA.

Federal Government Activities may obtain copies of Federal standardization documents and the Index of Federal Specifications, Standards and Commercial Item Descriptions from established distribution points in their agencies.

Military Specification:

- MIL-B-131 - Barrier Materials, Waterproof, Greaseproof, Flexible, Heat Sealable

Military Standards:

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

Copies of military specifications and standards required by contractors in connection with specific procurement functions are available from the Naval Publications and Forms Center, 5801 Tabor Avenue, Philadelphia, PA 19120.

2.2. Other publications. The following documents form 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.

American Society for Testing and Materials Standards:

- D 2221 - Standard Test Method for Creep Properties of Packaging Cushioning Materials
- D 3951 - Standard Practice for Commercial Packaging
- E 162 - Standard Test Method for Surface Flammability of Materials Using a Radiant Energy Heat Source
- E 662 - Standard Test Method for Specific Optical Density of Smoke Generated by Solid Materials

Applications for copies should be addressed to the American Society for Testing and Materials, 1916 Race Street, Philadelphia, PA 19103

3. REQUIREMENTS.

3.1. Material. The cushioning material shall be constructed of a composite of two or more sheets of plastic film. The composite material shall have uniformly distributed closed cells. The plastic film shall be laminated, coated, or fabricated in a manner such that the resulting material will meet the requirements of this specification. Class 2 and Class 3 cushioning material shall be not more than 2 months old when delivered to the Government.

For Class 1 cushioning material, the contractor shall certify that the material used contains a minimum of 30 % recycled plastic, including a minimum of 15 % post consumer recovered plastic. The Government reserves the right to require proof of such conformance prior to first delivery, and thereafter as may be otherwise provided for under the provisions of the contract.

3.2. Form. The material shall be furnished in rolls, perforated rolls, or sheets, in the nominal thickness specified. Standard rolls shall be 122 cm (48") wide. Rolls and sheets from 5 to 122 cm (2" to 48") wide may be specified. (See 6.2).

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3.2.1. Dimensional tolerances. The width tolerance for rolls and sheets shall be ± 6.4 mm ($\pm 1/4$ "). Rolls shall be not less than the length specified. The tolerance for the distance between the rows of perforations along the roll shall be ± 6.4 mm ($\pm 1/4$ "). Sheets shall be the length specified with a tolerance of ± 6.4 mm ($\pm 1/4$ ").

3.3. Perforations. When specified, the cushioning material shall have rows of perforations spaced at intervals along the roll. The distance between perforations in a row shall be not greater than 6.4 mm ($1/4$ ") for very thin, thin, and medium material and not greater than 12.7 mm ($1/2$ ") for thick material. The size of the perforations shall be such that the material can be separated at the perforations with reasonable ease.

3.4. Nominal cushioning thickness. The nominal cushioning thickness shall be as specified in Table I below. Cell height shall be tested as specified in 4.3.2.1. herein.

Table I

Nominal cushioning thickness	Cell height
Very thin	Up to 3.18 mm ($1/8$ ")
Thin	3.18 to 6.4 mm ($1/8$ " to $1/4$ ")
Medium	6.4 to 9.53 mm ($1/4$ " to $3/8$ ")
Thick	Greater than 9.53 mm ($3/8$ ")

3.5. Color. Class 1 material shall be tinted in any commercially acceptable color and be transparent. Class 2 material shall be pink tinted and transparent. Class 3 material shall be cream colored and translucent.

3.6. Physical properties. The cushioning material shall conform to the requirements of Table II, when tested as specified in Section 4 herein.

TABLE II. Physical Properties

Characteristic	Requirements	Test paragraph
Resistance to blocking	No signs of blocking, rupture, or separation.	4.3.2.2 ^(*)
Contact corrosivity	No more corrosion, etching, or pitting shall be visible on the bars that were wrapped with the cushioning material than on the unwrapped control bar.	4.3.2.3
Transparency (Class 1 & 2 only)	Lettering shall be legible when viewed through a single layer of cushioning material.	4.3.2.4 ^(*)
Heat sealability	No more than 0.79 mm (1/32") seam opening.	4.3.2.5
Low temperature flexibility	Cushioning material shall show no cracks, tears, or separation when bent over mandrel.	4.3.2.6 ^(*)
Abrasiveness	Surface of the panel shall show no scratches caused by the movement of the cushioning material across the panel when the panel is examined under 10 X magnification.	4.3.2.7 ^(*)
Creep	Not more than 10 percent.	4.3.2.8
Flame spread index (Class 3 only)	Not more than 10. Drippings shall be self extinguishing.	4.3.2.9.1
Maximum specific optical density (Class 3 only)	Not more than 45.	4.3.2.9.2
Resistance to reduced pressure (Class 3 only)	Not more than 4 percent cell failure.	4.3.2.10
Decay time (Class 2 & 3 only)	Not more than 2.0 seconds.	4.3.2.11

^(*) A certificate of compliance, based on tests performed not more than 12 months before the date of the certificate, will be accepted in lieu of test data.

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3.7. Workmanship. The material shall be uniformly fabricated in accordance with good commercial practice, and free from cracks, cuts, holes, chafed spots, or other defects which might impair its usefulness. The material shall be free from dirt, contamination, mold release compounds, or other foreign matter. Rolls and perforated rolls shall be evenly wound. Sheets shall be evenly stacked.

3.8. Use of Carcinogenic Agents. The use of carcinogenic agents in a concentration of greater than 0.1% in the manufacture/fabrication of Class 3 - Self extinguishing and static dissipative packaging materials is prohibited. See 6.4 to determine which chemicals are carcinogens.

3.8.1. Material Safety Data Sheets. The contracting activity shall be provided a Material Safety Data Sheet (MSDS) prior to contract award. The MSDS shall be prepared and submitted in accordance with FED-STD-313 and 29 CFR 1910.1200. In the event of a conflict the 29 CFR 1910.1200 shall take precedence. The MSDS shall be included with each shipment of the material covered by this specification.

4. QUALITY ASSURANCE PROVISIONS.

4.1. Responsibility for Inspection. Unless otherwise specified in the contract, the contractor is responsible for the performance of all inspection requirements as specified herein. Except as otherwise specified in the contract, 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 the specification where such inspections are deemed necessary to assure that supplies and services conform to prescribed requirements.

4.2. Quality conformance inspection. Sampling for inspection shall be performed in accordance with MIL-STD-105. The lot shall consist of all material manufactured by the same process, from the same components, at the same time. The lot size shall be expressed in units of square feet of cushioning material. Maximum inspection lot size shall be 46,452 m² (500,000 ft²).

4.2.1. Examination of the end item. The end item shall be examined for the defects set forth in the applicable subparagraphs at the inspection levels and acceptable quality levels (AQLs) specified. Random samples shall be drawn from each lot of the end item for examination of visual defects and preparation for delivery defects. Both sides of the cushioning material shall be examined.

4.2.1.1. Examination for visual and dimensional defects. The sample unit for this examination shall be 4 square feet of cushioning material. The inspection level shall be S-3 and AQL shall be 4.0, expressed in terms of percent defective.

<u>Examine</u>	<u>Defects</u>
Construction	Cells not uniformly distributed.
Form	Not rolls, perforated rolls, or sheets, as specified.
Roll length	Less than specified.
Sheet length	More than 6.4 mm (1/4") longer than the specified length. More than 6.4 mm (1/4") shorter than the length.
Width	More than 6.4 mm (1/4") wider than the specified width. More than 6.4 mm (1/4") narrower than the specified width.
Spacing between perforations	More than 6.4 mm (1/4") on very thin, thin, and medium cushioning material. More than 12.7 mm (1/2") on thick cushioning material.
Distance between rows of perforations	More than 6.4 mm (1/4") greater than specified. More than 6.4 mm (1/4") less than specified.
Unwinding rolls	During unwinding, material sticks together to the extent that unrolling causes tearing or injury to the material. Material not wound evenly. Telescoping.
Workmanship	Not clean, presence of mold release compound or foreign matter. Delamination, embrittlement, cracks, holes, cuts, chafed spots. Other defects that would impair usefulness of the material.

4.3. Test methods. Each lot of cushioning material presented for inspection shall be tested for the characteristics indicated in Tables I and II. A sample unit shall consist of 2.78 m² (30 ft²) of cushioning material. Each sample unit shall be tested for the requirements of Tables I and II, as applicable. Failure of any sample unit to meet any of the requirements of Tables I and II shall be cause for rejection of the lot. Sample units shall be selected as specified below:

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<u>Lot size</u>	<u>Sample units</u>
9,290 m ² (100,000 ft ²) or less	3
9,291 to 46,452 m ² (100,001 to 500,000 ft ²)	5

4.3.1. Test conditions. The cushioning material selected for testing shall be conditioned for not less than 24 hours at $23 \pm 2^{\circ}\text{C}$ ($73.4 \pm 3.6^{\circ}\text{F}$) and $50 \pm 5\%$ relative humidity. Unless otherwise specified, all tests shall be performed under these conditions.

4.3.2. Testing.

4.3.2.1. Cell Height Test. Sufficient amount of $12.7 \pm 0.64 \times 12.7 \pm 0.64$ cm ($5 \pm 1/4" \times 5 \pm 1/4"$) squares of cushioning material to make a stack as close to 2.5 cm (1.0") high as possible shall be cut from each sample unit of cushioning material in a manner which will provide the maximum number of closed air cells. The squares shall be carefully interleaved with sheets of pressboard 0.61 - 0.91 mm (0.024" - 0.036") thick and approximately 14×14 cm ($5-1/2" \times 5-1/2"$) in size. The squares of cushioning material shall be arranged so that each cell is directly over the corresponding cell in the square below. This stack shall be placed on a piece of glass approximately $14 \text{ cm} \times 14 \text{ cm} \times 3.2 \text{ mm}$ ($5-1/2" \times 5-1/2" \times 1/8"$). A similar piece of glass shall be placed on top of the cushioning material. A weight which will exert a pressure of 0.62 to 0.76 kPa (0.09 to 0.11 psi) on the cushioning material shall be placed in the center of the piece of glass on top of the stack. After 60 \pm 5 minutes, the distance between the glass plates shall be measured at each of the 4 corners of the stack with an instrument designed to measure to one thousandth of an inch. The measurements shall be taken carefully so as not to disturb the stack. These 4 measurements shall be averaged to determine the stack height. The stack height, minus the total thickness of the interleaving sheets, divided by the number of pieces of cushioning material in the stack, yields the cell height. The stacks prepared for determining cell height may subsequently be used for the Creep test (4.3.2.8).

4.3.2.2. Blocking Test. A piece of each sample unit of cushioning material shall be cut into six $13.3 \pm 0.64 \times 13.3 \pm 0.64$ cm ($5 \pm 1/4" \times 5 \pm 1/4"$) squares so as to provide a maximum number of closed air cells. The apparatus used in this test is the static load box described in ASTM D 2221. A resilient pad (Durometer hardness, Type "A", 60 ± 2) 12.7 mm ($1/2"$) smaller than the pieces of cushioning material and a maximum of 6.4 mm ($1/4"$) in thickness shall be placed on the inside bottom of the outer box of the apparatus. Two pieces of cushioning material, aligned with air cells directly over air cells, shall be placed over the pad and centered thereon. A stack of three couples shall be assembled, with each couple separated from the adjacent one by a resilient pad. The inner box shall be loaded with a weight which will exert

a pressure of 6.89 ± 0.69 kPa (1.0 ± 0.1 psi) on the cushioning material and the assembly shall be placed in an oven at $160 \pm 2^\circ\text{F}$ ($71 \pm 1.1^\circ\text{C}$) for 120 ± 10 minutes. The assembly shall be removed from the oven and allowed to come to room temperature. The assembly shall then be dismantled and the pieces of cushioning material examined for blocking. If slight blocking occurs between the faces of a couple, an attempt shall be made to separate them by clamping a free end of one of the blocked pieces in a vertical position so that the couple hangs freely. A 200 ± 10 gram weight shall then be gently attached to the corresponding free end of the opposite piece. If after 2 minutes the pieces do not separate, the material shall be considered blocked.

4.3.2.3. Contact Corrosivity Test. Every 24 month, or whenever the manufacturing process changes, if less than 24 month, the manufacturer shall conduct this test to establish that the product is noncorrosive.

4.3.2.3.1. Materials Test.

(a). Copper test bars: Three 4.8 to 6.4 mm ($3/16"$ to $1/4"$) diameter by 3.81 cm ($1-1/2"$) long test bars of electrolytic tough pitch (ETP) copper conforming to QQ-C-502. The temper is unimportant. Copper Development Association (CDA) alloy 110, ETP copper is the commercial equivalent. Bars shall be silver plated, 0.076 mm (0.003") minimum thickness in accordance with QQ-S-365, type II, grade B. (Plated bars shall be immediately protected in such a manner that surfaces will remain tarnish-free until the time of use.)

(b). Specimens: Two 10.2 x 30.5 cm ($4" \times 12"$) samples of cushioning material.

(c). Glycerin (glycerol)/distilled water solution having a specific gravity of 1.1724 at $24 \pm 1.7^\circ\text{C}$ ($75 \pm 3^\circ\text{F}$). This is equivalent to 785.5 grams of glycerine per liter of solution.

(d). Barrier material conforming to MIL-B-131 Class 1, cut into 27 x 38 cm ($10-1/2" \times 15"$) pieces.

4.3.2.3.2. Equipment.

(a). Equipment for heat sealing MIL-B-131, Class 1; barrier material.

(b). Desiccator, containing at least 500 milliliters of the glycerin/water solution, which is large enough to hold at least 3 test assemblies in an approximately vertical position.

(c). Circulating oven to maintain temperature of desiccator containing the test assemblies at $49 \pm 1.1^\circ\text{C}$ ($120 \pm 2^\circ\text{F}$).

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4.3.2.3.3. Preparation of test Assemblies. Prepare 2 test assemblies in the following manner: Fold the 38 cm (15") length of the barrier material and make double heat seals along the 19 cm (7-1/2") edges to form a bag. Wipe the plated copper bars with surgical gauze that has been moistening with methanol, then wipe dry with surgical gauze. Place the bar along the 10.2 cm (4") edge of the 10 x 30 cm (4" x 12") specimen of cushioning material. The surfaces with the bubbles shall be in contact with the plated bar. Loosely wrap the cushioning material around the test bar. Place the wrapped bar in the bag. The test bar shall be approximately parallel to the bottom of the bag. Make a double heat seal across the top of the bag. Prepare 1 control test assembly that contains only a plated bar, without the cushioning material, in the barrier material bag.

4.3.2.3.4. Procedure. Insert the 3 test assemblies in the desiccator, seal the desiccator, and place in the oven for not less than 504 hours (21 days). Remove the desiccator from the oven and the test assemblies from the desiccator. Open the assemblies and compare the plated copper bars which were wrapped in the cushioning material with the plated copper bar which was placed in the control test assembly unwrapped.

4.3.2.4. Transparency Test (Classes 1 and 2). Lettering of 10-point type, approximately 3.2 mm (1/8") in height, shall be held directly behind and touching a piece cut from each sample unit of the cushioning material.

4.3.2.5. Heat Sealability Test. Two 15 x 30 cm (6" x 12") pieces shall be cut from each sample unit, 1 piece with the 30 cm (12") length parallel to the length of the roll or sheet and 1 piece with the 30 cm (12") length perpendicular to the length of the roll or sheet. Each piece shall be tested in accordance with Method 2024 of FED-STD-101. The bubbles shall be on the inside of the flattened tube. The test load shall be 0.45 ± 0.045 Kg (1.0 ± 0.1 lb_m) and two 2.5 cm (1") wide strips from each piece shall be tested for compliance with Table II.

4.3.2.6. Low Temperature Flexibility Test. Four 10 x 30 cm (4" x 12") pieces shall be cut from each sample unit, 2 pieces with the 30 cm (12") length parallel to the length of the roll or sheet and 2 pieces with the 30 cm (12") length perpendicular to the length of the roll or sheet. Condition all the pieces and a round, 6.4 mm (1/4"), steel mandrel for 3 hours at $-29 \pm 1.1^{\circ}\text{C}$ ($-20 \pm 2^{\circ}\text{F}$) in a manner which allows circulation of air against both surfaces of the cushioning material. When conditioning is complete, without removing the cushioning material or the mandrel from the conditioned area, bend each piece around the mandrel through an angle of 180° , with the bubble side facing up, at a rate such that banding takes 2 to 3 seconds. Continue conditioning the cushioning material and the mandrel for an additional 3 hours, then bend the

pieces around the mandrel again in the same manner they were bent previously, except that the bubble side shall face down.

4.3.2.7. Abrasion Test. One piece of cushioning material of any convenient size shall be cut from each sample unit and placed with the bubble side facing down on a polished 2024-T4 aluminum panel conforming to QQ-A-250/4. The aluminum panel shall be wider than the cushioning material and long enough to permit the cushioning material to be pulled along the panel for 15 cm (6"). A weight which will exert a force of 6.89 ± 0.68 kPa (1.0 ± 0.1 psi) shall be placed on top of the cushioning material, then the weighted cushioning material shall be pulled 15 ± 1.3 cm (6.0 ± 0.5 ") back and forth along the panel for 30 cycles at an approximate speed of 30 cm (1 ft) or cycle per second. The weight shall then be removed and the cushioning material reversed so that the bubble side faces up. The weight shall be replaced and the cushioning material pulled across the aluminum panel as was done above for an additional 30 cycles.

4.3.2.8. Creep Test. Creep, based on initial thickness under test load, shall be determined as specified in ASTM D 2221 with the following exceptions:

(a). Preconditioning at 25°C and 35 % relative humidity is not required. Cushioning material shall be conditioned and tested as specified in 4.3.1. No other conditioning is required.

(b). For each creep determination that is required, 1 test stack shall be prepared from each sample unit as specified in 4.3.2.1, except that aluminum plates as specified in ASTM D 2221 shall be used instead of pieces of glass. The stacks prepared for determining cell height may be used. This stack of cushioning material interleaved with fiberboard shall constitute the test specimen referenced by Section 7 of ASTM D 2221. The total thickness of the fiberboard interleaving sheets shall be deducted from the vertical perpendicular distance between the aluminum plates when measuring initial thickness and deflected thickness.

(c). A creep determination with a time interval of 96 ± 2 hours and a test load of 6.89 ± 0.34 kPa (1.0 ± 0.05 psi) shall be performed on each lot of cushioning material presented for inspection. A creep determination with a time interval of 30 ± 1 days and a test load of 1.72 ± 0.068 kPa (0.25 ± 0.01 psi) shall be performed quarterly or whenever there is a change in the manufacturing process or materials.

4.3.2.9. Flammability Test (Class 3 only). The supplier shall initially conduct the tests specified in 4.3.2.9.1 and 4.3.2.9.2 to establish that the product is fire retardant. The tests shall be repeated every 12 months or whenever there is a change in the manufacturing process or materials, if less than 12 month.

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4.3.2.9.1. Flame spread index. The flame spread index shall be determined in accordance with ASTM E 162.

4.3.2.9.2. Maximum specific optical density. The maximum specific optical density shall be determined in accordance with ASTM E 662.

4.3.2.10. Resistance to Reduced Pressure Test. A strip of cushioning material measuring 20 cm (8") by the full width of the roll or sheet shall be cut from each sample unit. The strips shall be examined for defective cells. Each defective cell shall be marked. The strips shall be loosely folded or rolled and placed in a vacuum chamber. The air pressure on the cushioning material shall be reduced to 47.8 ± 0.5 cm (18.8 \pm 0.2") of mercury and maintained at this pressure for 5.0 ± 0.1 minutes. The air pressure shall then be raised to ambient and the cushioning material removed. Each strip shall be examined and the deflated cells without markings counted. The percentage of cell failure shall be the number of deflated unmarked cells times 100 divided by the total number of unmarked cells.

4.3.2.11. Static Dissipative Properties Test (Class 2 & 3). Static dissipative material shall be tested in accordance with Method 4046 of FED-STD-101 except that the 12 day oven test and the 24 hour water shower are not required. Samples shall be conditioned as specified in 4.3.1 for 24 hours before placing in the desiccating chamber. The supplier shall initially conduct this test to establish that the cushioning material is static dissipative. The test shall be repeated every 12 months or whenever there is a change in the manufacturing process or materials, if less than 12 month.

5. PREPARATION FOR DELIVERY.

5.1. Packaging. The levels of packaging shall be level A or Commercial, as specified (see 6.2).

5.1.1. Level A.

5.1.1.1. Rolls and perforated rolls. Each roll shall be evenly wound on a core with a minimum inside diameter of 7.6 cm (3") and restrained from unwinding or telescoping. The rolls shall be wrapped with material conforming to UU-P-268 or PPP-B-1055. Each roll shall be completely wrapped, closed at the ends, and secured with pressure-sensitive tape conforming to PPP-T-60, Type IV, or PPP-T-76.

5.1.1.2. Sheets. Sheets shall be bundled in the quantities specified (See 6.2). Fiberboard pads conforming to PPP-P-320, type CF, class domestic, variety SW, grade optional, shall be placed on the top and bottom of each bundle. Bundles shall be wrapped and sealed as specified for rolls in 5.1.1.1.

5.1.2. Commercial. Cushioning material shall be packaged to afford protection against deterioration, physical damage, or loss during shipment from the supply source to the first receiving activity.

5.2. Packing.

5.2.1. Level A. Rolls and perforated rolls, packaged in accordance with 5.1.1.1, and sheets packaged in accordance with 5.1.1.2, shall be packed in boxes conforming to PPP-B-601, overseas type.

5.2.2. Commercial. Each unit of issue, individually packaged in accordance with 5.1.2, shall be packed to assure acceptance by common carrier and to provide product protection against loss or damage during multiple shipments, handling and storage.

5.4. Optional preparation for delivery. When specified in the contract or purchase order, packaging, packing, and marking shall be in accordance with ASTM D 3951.

6. NOTES.

6.1. Intended use. The cellular cushioning materials described in this specification are intended for use within packages to protect items from damage due to shock, vibration, concentrated forces, contamination, and abrasion during handling and shipment. The transparent Class 1 material is especially suitable for use as cushioning inserts within transparent bags and envelopes. The transparency of Class 1 and Class 2 material permits inspection of the contents, without opening the package, for condition of humidity indicators. The flexibility of the material permits it to be used as pads, bags, wrap, dunnage, or filler. When maximum transparency is desired, the use of Class 1 or Class 2 material should be limited to one thickness. Class 2 and Class 3 materials are used to protect electronic devices which are sensitive to static charges. Class 3 material is used where fire retardant cushioning material is required.

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6.2. Ordering data. Purchasers should select the preferred options permitted herein and include the applicable information below in procurement documents:

- (a). Title, number, and date of this specification.
- (b). Quantity.
- (c). Class (See 1.2, and 3.6).
- (d). Nominal thickness.
- (e). Form (rolls, perforated rolls, or sheets), (See 3.2).
- (f). Length and width of rolls and perforated rolls (if other than standard), (See 3.2).
- (g). Distance between perforations, if perforated rolls, (See 3.2).
- (h). Length and width of sheets, (See 3.2).
- (i). Quantity per bundle, (See 5.1.1.2).
- (j). Unit of issue, (See 5.2.2).
- (k). Levels of packaging and packing required, (See 5.1 and 5.2).
- (l). Special marking, if required, (See 5.3.1 and 5.3.2).
- (m). Preparation for delivery in accordance with ASTM D 3951, if required, (See 5.4).
- (n). Addresses for submission of MSDSs (for Class 3 only) (see 6.5).

6.3. Material disposal. Cushioning material may be disposed of by reuse, recycling, incineration, or other means.

6.4. Carcinogen. A carcinogen is defined as a chemical appearing on one or more of the following source documents: Occupational Safety and Health Administration regulated carcinogens list, National Toxicology Program list, International Agency for Research on Cancer lists 1, 2A or 2B.

6.5. Material Safety Data Sheets. Contracting officers will identify those activities requiring copies of completed MSDS prepared in accordance with FED-STD-313 and 29 CFR 1910.1200. The pertinent Government mailing addresses for submission of data sheets are listed in Appendix B of FED-STD-313.

6.6. Precautions in Handling. Certain individuals may experience adverse reactions of a respiratory, dermatological, or other nature or be sensitive to ingredients used in the manufacture/fabrication of some fire retardant packaging materials. Problems or adverse effects resulting or suspected from handling these materials should be referred to the local Medical Department for appropriate follow-up. Safety concerns should be referred to the local Safety Office for review. Questions regarding specific packaging materials may be referred to the Navy Environmental Health Center, Code 34B, Norfolk, Va. The following precautions during handling are recommended:

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(1). Cotton gloves should be worn. Gloves should be changed at the end of the workshift, and laundered before reuse or discarded. Gloves should be changed more frequently if they fail to provide protection against skin contamination during the workday.

(2). Good general ventilation should be provided to insure that significant airborne levels of dust from fire retardant packaging materials do not accumulate in work areas. Questions should be referred to the local Industrial Hygienist for review. If dust generation is unavoidable, a National Institute for Occupational Safety and Health/Mine Safety and Health Administration approved respirator, selected based on the exposure of concern, must be provided and used. Contact the local Industrial Hygienist for specific guidance pertaining to requests for training and use of approved respirators.

MILITARY INTERESTS:

PREPARING ACTIVITY:

Military Coordinating Activity:

GSA - FSS

Army - GL

Custodians:

Army - GL
Navy - AS
Air Force - 69

Review Activities:

Army - AR, MD, MI
Navy - CG, DS
Air Force - 99

User Activity:

Army - AV

NOTICE OF
CANCELLATION

PPP-C-795
NOTICE 1
October 15, 1998

FEDERAL SPECIFICATION

CUSHIONING MATERIAL, PACKAGING (FLEXIBLE CLOSED CELL PLASTIC
FILM, FOR LONG DISTRIBUTION CYCLES)

Federal Specification PPP-C-795, dated June 13, 1994, is hereby cancelled. Commercial Item Description A-A-549, will be used for future procurements of this commodity.

Preparing Activity:
GSA - FSS

FSC 8135