

[INCH-POUND]

A-A-1898B  
June 17, 1991  
 SUPERSEDING  
 A-A-1898A  
 June 30, 1986

COMMERCIAL ITEM DESCRIPTION

CUSHIONING MATERIAL, CELLULOSIC, PACKAGING

The General Services Administration has authorized the use of this Commercial Item Description in preference to Federal Specification PPP-C-843, Cushioning Material, Cellulosic; and Commercial Item Description A-A-1899, Cushioning Material, Packaging (Cellulosic, Water Resistant), which have been cancelled.

This description covers cushioning material in roll and multifold unit forms used for packaging applications.

**CLASSIFICATION:** Cushioning material shall be of the following grades, classes, styles, and sizes, as specified (see Section 6)

Grade I - Water Absorbent  
 Grade II - Water Resistant  
 Grade III - Fire Retardant, Water Resistant

Class A - Low Tensile Strength  
 Class B - Medium Tensile Strength  
 Class C - High Tensile Strength

Style 1 - Rolls, plain  
 Style 2 - Rolls, perforated  
 Style 3 - Multifold units, longitudinally compressed  
 Style 4 - Multifold units, longitudinally compressed and perforated

Size A - Compressed length 35 feet; Width 12 inches;  
 Nominal thickness 0.75 inch  
 Size B - Compressed length 35 feet; Width 24 inches;  
 Nominal thickness 0.75 inch  
 Size C - Compressed length 26 feet; Width 24 inches;  
 Nominal thickness 1.00 inch  
 Size D - Length 165 feet; Width 40 inches;  
 Nominal thickness 0.37 inch  
 Size E - Length 165 feet; Width 36 inches;  
 Nominal thickness 0.37 inch  
 Size F - Length 130 feet; Width 30 inches;  
 Nominal thickness 0.50 inch  
 Size G - Length 104 feet; Width 20 inches;  
 Nominal thickness 0.50 inch

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

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- Size H - Length 60 feet; Width 20 inches;  
Nominal thickness 1.00 inch
- Size I - Length 200 feet; Width 20 inches;  
Nominal thickness 0.25 inch
- Size J - Length 100 feet; Width 36 inches;  
Nominal thickness 1.00 inch
- Size K - Length 300 feet; Width 24 inches;  
Nominal thickness 0.20 inch
- Size L - Length 200 feet; Width 24 inches;  
Nominal thickness 0.25 inch

1. SALIENT CHARACTERISTICS:

A. Construction and Workmanship. The cushioning material shall be composed of cellulosic material that will provide a product complying with the requirements of this commercial item description. Material shall be perforated or nonperforated, made in rolls or in longitudinally compressed multifold units. The material shall be clean and free from any defects which might affect its utility.

B. Length and Width. The length and width of the rolls or multifold units shall be as specified with a tolerance of  $\pm 3$  percent for the specified length, and  $\pm 1/4$  inch for the specified width. Unless otherwise specified in the contract, the distance between rows of perforations shall be 30 inches with a tolerance of  $\pm 1$  inch. For longitudinally compressed multifold unit, length and width shall be determined on compressed material.

C. Physical Properties: The material shall pass the requirements specified below. All testing, except expansion, shall be performed on fully expanded cushioning material.

1). Thickness. The measured thickness of the material shall be not less than 85 percent of the nominal thickness when tested as specified in (2C).

2). Strain. The strain limit of the material shall be not less than 50 nor more than 75 percent when tested as specified in (2C).

3). Expansion. The longitudinally compressed material shall expand not less than 4.8 times its compressed length without rupture of the plies when tested as specified in (2E).

4). Absorbency Capacity. Grade I material shall have a water/fiber ratio of not less than 14 when tested as specified in (2F). Grade II and III material shall have a water/fiber ratio of not more than 3 when tested as specified in (2F).

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5). Tensile Strength. Cushioning material shall have a tensile strength in each direction of not less than that specified in Table I below, when tested as specified in (2D).

TABLE I

Nominal Thickness	Low Tensile Strength	Medium Tensile Strength	High Tensile Strength
1.00 in	1.00 lb	6.00 lb	40.00 lb
0.75 in	0.75 lb	4.50 lb	30.00 lb
0.50 in	0.50 lb	3.00 lb	20.00 lb
0.37 in	0.37 lb	2.22 lb	14.80 lb
0.25 in	0.25 lb	1.50 lb	10.00 lb
0.20 in	0.20 lb	1.20 lb	8.00 lb

6). Flame Spread Index (Grade III). A flame spread index shall be not more than 25 when tested as specified in (2G).

7). Specific Optical Density (Grade III). A specific optical density shall be not more than 100 when tested as specified in (2H).

D. Toxic Agents (Grade III). The use of carcinogenic agents, or any other chemicals that produce toxic substances when ignited, is prohibited in fabrication of fire retardant packaging materials. A carcinogen is defined as a chemical appearing on one or more of the following sources: Occupational Safety and Health Administration regulated carcinogens list, National Toxicology Program list, or the International Agency for Research on Cancer list 1, 2A or 2B.

E. 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, 29 CFR 1910.1200 shall take precedence. The MSDS shall be included with each shipment of Grade III material covered by this document (see 6C).

## 2. QUALITY ASSURANCE:

A) 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

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inspections are deemed necessary to assure that supplies and services conform to prescribed requirements.

B) Sampling. Samples shall be selected for inspection in accordance with MIL-STD-105, using the plans described in Table II. A lot shall consist of a number of sample units manufactured by the same process from the same components at the same time. Random samples shall be drawn from each lot for the end item inspection. Unless otherwise specified, every lot shall be tested.

TABLE II

Inspection Type	AQL (%) defective	Inspection Level	Sample Unit	Required Paragraph
Construction & Workmanship	2.5	S-3	Roll or Multifold Unit	1A
Length & Width	2.5	S-3	Roll or Multifold Unit	1B
Physical Properties	2.5	S-1	Roll or Multifold Unit	1C
Packaging Packing & Marking	2.5	S-2	1 unit of issue	4

C) Thickness and Strain Test.

Thickness. From each sample unit make a 1 inch high stack of  $4 \pm 1/8$  inch square pieces of the cushioning material. If the material is 1 inch thick or greater, one piece is enough. If more than one piece of material is used, the measured thickness shall be the measured height of the stack divided by the number of pieces used. Place a  $6 \pm 1/2$  inch square flat load plate that weighs  $0.40 \pm 0.05$  pounds on top of this stack. After 1 minute, measure the vertical distance of the stack to the nearest  $1/32$  inch between the level surface and the load plate at each of the four corners and record the average. The average of the four readings shall be the measured thickness. The percent of nominal thickness shall be calculated as follows:

$$\text{Percent of nominal thickness} = \frac{\text{measured thickness}}{\text{nominal thickness}} \times 100$$

Strain. Take each stack prepared for the thickness test and apply a load resulting in 3 p.s.i. to this stack for 15 seconds. After 15 seconds, measure the loaded height at the four corners and record the average (compressed thickness). The strain shall be calculated as follows:

$$\text{Strain (in percent)} = \frac{\text{measured thickness} - \text{compressed thickness}}{\text{measured thickness}} \times 100$$

D) Tensile Strength Test. Two individual  $4 \pm 1/8$  inch square specimens shall be prepared from each sample unit. Place one specimen between two clamps that are 2 inches apart. The clamps shall have flat faces, of at least 2 by 4 inches and shall exert uniform pressure. The tensile strength shall be determined by attaching one clamp to a stationary support and adding weights to the other clamp until the material breaks or tears. Perform an additional determination of tensile strength at right angles to first one.

E) Expansion Test. For each sample unit, expansion shall be determined by cutting out and placing a 4 by 14 inch ( $\pm 1/4$  inch) specimen of compressed cushioning material on a level surface. Place reference marks along the length of the specimen  $10 \pm 1/4$  inches apart. Clamp a 4 inch wide end, and applying a gradual force, extend the material until the maximum amount of extension, without ply rupture, is reached. Measure the expanded length between the marks and calculate the expansion as follows:

$$\text{Expansion} = \text{Expanded length} / \text{Compressed length}$$

F) Absorbency Capacity Test. At least every 6 months, or whenever the manufacturing process changes, if less than 6 months, the cushioning material shall be tested as specified in ASTM D 4250.

G) Flame Spread Index Test. At least every 12 months, or whenever the manufacturing process changes, if less than 12 months, the cushioning material shall be tested as specified in ASTM E 162.

H) Specific Optical Density Test. At least every 12 months, or whenever the manufacturing process changes, if less than 12 months, the cushioning material shall be tested as specified in ASTM E 662.

### 3. REGULATORY REQUIREMENTS:

The offeror/contractor is encouraged to use recovered materials in accordance with Public Law 94-580, as amended, to the maximum extent practicable.

4. PACKAGING, PACKING, AND MARKING: Packaging, packing, and marking shall be as specified in the contract or order.

### 5. REFERENCED DOCUMENTS:

The issue of the referenced documents in effect on the date of the solicitation for offers or request for proposals shall be used to determine conformance with the requirements of this Commercial Item Description.

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A. Public Law

Public Law 94-580 - Resource Conservation and Recovery Act,  
(Part of U.S. Code, Title 42)

B. Federal Standard

FED-STD-313 - Material Safety Data, Transportation Data and  
Disposal Data for Hazardous Materials Furnished to  
Government Activities

29 CFR Part 1910 - Occupational Safety and Health Standards.

Federal Specifications, Standards, Commercial Item Descriptions and  
Code of Federal Regulations (CFR) are for sale on a subscription  
basis by the Superintendent of Documents, U.S. Government Printing  
Office, Washington, DC 20402.

C. ASTM References

ASTM E 162 - Standard Test Method for Surface Flammability of  
Materials using a Radiant Heat Energy Source.

ASTM E 662 - Standard Test Method for Specific Optic Density  
of Smoke Generated by Solid Materials.

ASTM D 4250 - Standard Test Method for Water-Holding Capacity  
of Bibulous Fibrous Products

Available from: ASTM, 1916 Race Street, Philadelphia, PA, 19103  
or, for DOD  
activities from: Standardization Documents Order Desk, Building 4D,  
700 Robbins Avenue, Philadelphia, PA 19111-5094

D. Military Standard

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

Available from: Standardization Documents Order Desk, Building 4D,  
700 Robbins Avenue, Philadelphia, PA 19111-5094

6. NOTES:

A. Purchasers shall specify:

- a) Grade, class, style, and size required
- b) Packaging, packing and marking required.
- c) Addresses for submission of MSDs (see 6.C).

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**B. Item Identifiers/Reference Part Number System**  
**(for cataloging use only)**

AA1898 - B 2 A 8 This example describes a medium tensile strength, water resistant, 60 foot long, 20 inches wide, 1 inch thick roll of cushioning material.

- 1-Size A - Compressed length 35 feet;  
Width 12 inches; Nominal thickness 0.75 inch
- 2-Size B - Compressed length 35 feet;  
Width 24 inches; Nominal thickness 0.75 inch
- 3-Size C - Compressed length 26 feet;  
Width 24 inches; Nominal thickness 1.00 inch
- 4-Size D - Length 165 feet; Width 40 inches;  
Nominal thickness 0.37 inch
- 5-Size E - Length 165 feet; Width 36 inches;  
Nominal thickness 0.37 inch
- 6-Size F - Length 130 feet; Width 30 inches;  
Nominal thickness 0.50 inch
- 7-Size G - Length 104 feet; Width 20 inches;  
Nominal thickness 0.50 inch
- 8-Size H - Length 60 feet; Width 20 inches;  
Nominal thickness 1.00 inch
- 9-Size I - Length 200 feet; Width 20 inches;  
Nominal thickness 0.25 inch
- 10-Size J - Length 100 feet; Width 36 inches;  
Nominal thickness 1.00 inch
- 11-Size K - Length 300 feet; Width 24 inches;  
Nominal thickness 0.20 inch
- 12-Size L - Length 200 feet; Width 24 inches;  
Nominal thickness 0.25 inch

- A-Style 1 - Rolls, plain
- B-Style 2 - Rolls, perforated
- C-Style 3 - Multifold unit, longitudinally compressed
- D-Style 4 - Multifold unit, longitudinally compressed and perforated

- 1-Class A - Low Tensile Strength
- 2-Class B - Medium Tensile Strength
- 3-Class C - High Tensile Strength

- A-Grade I - Water Absorbent
- B-Grade II - Water Resistant
- C-Grade III - Fire Retardant, Water Resistant

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C. Material Safety Data Sheets. Contracting Officers shall 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.

MILITARY INTERESTS:

PREPARING ACTIVITY:

Military Coordinating Activity

GSA - FSS

Army - GL

Custodians

Army - GL

Navy - AS

Air Force - 99

Review Activities

Army -AT, ME, MI, SM

DLA - SS