

[METRIC]

A-A-1898C

February 22, 1994

SUPERSEDING

A-A-1898B

June 17, 1991

COMMERCIAL ITEM DESCRIPTION

CUSHIONING MATERIAL, CELLULOSIC, PACKAGING

The General Services Administration has authorized the use of this commercial item description, by all Federal agencies

1. SCOPE: This document covers cushioning material in roll and multifold unit forms used for packaging applications. The cushioning material shall be of the following grades, classes, styles, and sizes, as specified.

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 10.7 meters (35'); Width 30.5 cm (12");
Nominal thickness 19.1 mm (0.75")

Size B - Compressed length 10.7 meters (35'); Width 61.0 cm (24");
Nominal thickness 19.1 mm (0.75")

Size C - Compressed length 7.9 meters (26'); Width 61.0 cm (24");
Nominal thickness 25.4 mm (1.00")

Size D - Length 50.3 meters (165'); Width 101.6 cm (40");
Nominal thickness 9.40 mm (0.37")

Size E - Length 50.3 meters (165'); Width 91.4 cm (36");
Nominal thickness 9.40 mm (0.37")

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.

NSC 815

A-A-1898C

Size F - Length 39.6 meters (130'); Width 76.2 cm (30");
 Nominal thickness 12.7 mm (0.50")
 Size G - Length 31.7 meters (104'); Width 50.8 cm (20");
 Nominal thickness 12.7 mm (0.50")
 Size H - Length 18.3 meters (60'); Width 50.8 cm (20");
 Nominal thickness 25.4 mm (1.00")
 Size I - Length 61.0 meters (200'); Width 50.8 cm (20");
 Nominal thickness 6.4 mm (0.25")
 Size J - Length 30.5 meters (100'); Width 91.4 cm (36");
 Nominal thickness 25.4 mm (1.00")
 Size K - Length 91.4 meters (300'); Width 61.0 cm (24");
 Nominal thickness 5.1 mm (0.20")
 Size L - Length 61.0 meters (200'); Width 61.0 cm (24");
 Nominal thickness 6.4 mm (0.25")
 Size M - Length 76 meters (250'); Width 61 cm (24");
 Nominal thickness 6.4 mm (0.25")

2. 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 of the rolls or multifold units shall be not less than 98 % of the specified length. The width shall be as specified with a tolerance of ± 6.35 mm ($\pm 1/4$ "). Unless otherwise specified, the distance between rows of perforations shall be 76.2 cm (30") with a tolerance of ± 2.54 cm (± 1 ").

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 % of the nominal thickness when tested as specified in (3.C).

2). Strain. The strain limit of the material shall be not less than 50 nor more than 75 % when tested as specified in (3.C).

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 (3.E).

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

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 (3.D).

TABLE I

Nominal Thickness	Low Tensile Strength	Medium Tensile Strength	High Tensile Strength
25.4 mm (1.00")	0.138N (1.00 lb)	0.830N (6.00 lb)	5.53N (40.00 lb)
19.1 mm (0.75")	0.104N (0.75 lb)	0.622N (4.50 lb)	4.15N (30.00 lb)
12.7 mm (0.50")	0.069N (0.50 lb)	0.415N (3.00 lb)	2.76N (20.00 lb)
9.4 mm (0.37")	0.051N (0.37 lb)	0.307N (2.22 lb)	2.05N (14.80 lb)
6.4 mm (0.25")	0.035N (0.25 lb)	0.207N (1.50 lb)	1.38N (10.00 lb)
5.1 mm (0.20")	0.028N (0.20 lb)	0.166N (1.20 lb)	1.11N (8.00 lb)

* N - Newtons

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

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

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 7.C).

A-A-1898C

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

B) Contractor Certification. The contractor shall certify and maintain substantiating evidence that the product offered meets the salient characteristics of this Commercial Item Description, and that the product conforms to the producer's own drawings, specifications, standards, and quality assurance practices.

C) 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, Length & Width	2.5	S-3	Roll or Multifold Unit	1A 1B
Physical Properties	2.5	S-1	Roll or Multifold Unit	1C

C) Thickness and Strain Test.

Thickness. From each sample unit make a 2.54 cm (1") high stack of 10.2 ± 0.32 cm ($4 \pm 1/8$ ") square pieces of the cushioning material. If the material is 2.54 cm (1") 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 15.2 ± 1.27 cm ($6 \pm 1/2$ ") square flat load plate that weighs 181.4 ± 22.7 grams (0.40 ± 0.05 lb.) on top of this stack. After 1 minute, measure the vertical distance of the stack to the nearest 0.80 mm ($1/32$ ") 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:

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

Strain. Take each stack prepared for the thickness test and apply a load resulting in 122 kPascals (3 psi) 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 10.2 ± 0.32 cm ($4 \pm 1/8$ ") square specimens shall be prepared from each sample unit. Place one specimen between two clamps that are 5.1 cm (2") apart. The clamps shall have flat faces, of at least 5.1×10.2 cm (2" x 4") 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 $10.2 \pm 0.64 \times 35.6 \pm 0.64$ cm ($4 \pm 1/4$ " x $14 \pm 1/4$ ") specimen of compressed cushioning material on a level surface. Place reference marks along the length of the specimen 25.4 ± 0.64 cm ($10 \pm 1/4$ ") apart. Clamp a 10.2 cm (4") 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. Weigh to 0.1 gram (nearest 0.01g) a 104.8 ± 3.18 cm ($4-1/8 \pm 1/8$ ") square piece of material having a thickness of not less than 12.7 mm (1/2"). This is the dry weight. Material with thickness less than 12.7 mm (1/2") shall be stacked to at least 12.7 mm (1/2") and stapled with weighed staples at the four corners. Place material on the surface of water which is maintained at 21.1°C to 23.8°C (70°F to 75°F). The water bath shall be sufficiently large to permit the material to submerge. After 30 seconds, remove the material with a piece of 12.7 mm (1/2") mesh screen which is 15.2 cm (6") square. Drain in a horizontal position for 1 minute and weigh as described above. This is the wet weight. Calculate the absorbing capacity as follows:

$$\text{Absorbing Capacity} = \frac{\text{Wet Weight} - \text{Dry Weight} + (\text{Staple wt. if applicable})}{\text{Dry Weight} + (\text{Staple wt. if applicable})}$$

A-A-1898C

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.

4. REGULATORY REQUIREMENTS: The offeror/contractor is encouraged to use recovered materials in accordance Paragraph 23.403 of the Federal Acquisition Regulation.

5. PACKAGING, PACKING, AND MARKING: Shall be as specified in the contract or purchase order.

6. 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.

Federal Standards and Regulations:

A. Federal Acquisition Regulation. Paragraph 23.403

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

C. 29 CFR Part 1910 - Occupational Safety and Health Standards.

Available from General Services Administration Business Service Centers in Boston, MA; New York, NY; Washington, D.C.; Atlanta, GA; Chicago, IL; Kansas City, MO; Fort Worth, TX; Denver, Co; San Francisco, CA; Los Angeles, CA; and Auburn, WA.

In addition to the Business Service Centers, Federal Standards, Regulations, Specifications and Commercial Item Descriptions, may be obtained from GSA Specifications Unit (3FPB-W), 7th and D Streets S.W., Washington, DC 20407. Their current phone numbers, should anyone ask, are (202) 708-9205, or FTS-458-9205.

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.

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

7. **NOTES:** Purchasers shall specify the following in the contract
or purchase order.

A. Ordering Data.

- a) Grade, class, style, and size required
- b) Packaging, packing and marking required.
- c) Addresses for submission of MSDSS (see 7.C).

A-A-1398C

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

AA1398 - 2 B 1 H This example describes a medium tensile strength, water resistant, 18.3 meters (60') long, 50.8 centimeters (20") wide, 25.4 millimeters (1") thick roll of cushioning material.

A-Size A - Compressed length 10.7 m (35'); Width 30.5 cm (12"); Nominal thickness 19.1 mm (0.75")
 B-Size B - Compressed length 10.7 m (35'); Width 61.0 cm (24"); Nominal thickness 19.1 mm (0.75")
 C-Size C - Compressed length 7.92 m (26'); Width 61.0 cm (24"); Nominal thickness 25.4 mm (1.00")
 D-Size D - Length 50.3 m (165'); Width 101.6 cm (40"); Nominal thickness 9.40 mm (0.37")
 E-Size E - Length 50.3 m (165'); Width 91.4 cm (36"); Nominal thickness 9.40 mm (0.37")
 F-Size F - Length 39.6 m (130'); Width 76.2 cm (30"); Nominal thickness 12.7 mm (0.50")
 G-Size G - Length 31.7 m (104'); Width 50.8 cm (20"); Nominal thickness 12.7 mm (0.50")
 H-Size H - Length 18.3 m (60'); Width 50.8 cm (20"); Nominal thickness 25.4 mm (1.00")
 I-Size I - Length 61.0 m (200'); Width 50.8 cm (20"); Nominal thickness 6.4 mm (0.25")
 J-Size J - Length 30.5 m (100'); Width 91.4 cm (36"); Nominal thickness 25.4 mm (1.00")
 K-Size K - Length 91.4 m (300'); Width 61.0 cm (24"); Nominal thickness 5.1 mm (0.20")
 L-Size L - Length 61.0 m (200'); Width 61.0 cm (24"); Nominal thickness 6.4 mm (0.25")
 M-Size M - Length 76 meters (250'); Width 61 cm (24"); Nominal thickness 6.4 mm (0.25")

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

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

1-Grade I - Water Absorbent
 2-Grade II - Water Resistant
 3-Grade III - Fire Retardant, Water Resistant

A-A-1898C

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 - PSS

Army - GL

Custodians

Army - GL

Navy - AS

Air Force - 99

Review Activities

Army -AT, ME, MI, SM

DLA - SS