

METRIC

A-A-1898D

15 October 2012

SUPERSEDING

A-A-1898C

22 February 1994

COMMERCIAL ITEM DESCRIPTION

CUSHIONING MATERIAL, CELLULOSIC, PACKAGING

The General Services Administration has authorized the use of this Commercial Item Description for all Federal agencies.

1. SCOPE. This document covers cushioning material in roll and multifold unit forms used for packing applications.

2. CLASSIFICATION. The cushioning material shall be of the following grades, classes, styles, and sizes.

2.1 Grade.

Grade I	-	Water Absorbent
Grade II	-	Water Resistant

2.2 Class.

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

2.3 Style.

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

Comments, suggestions, or questions on this document should be addressed to: Commander, Naval Air Warfare Center Aircraft Division, Code 4L8000B120-3, Highway 547, Lakehurst, NJ 08733-5100 or emailed to michael.sikora@navy.mil . Since contact information can change, you may want to verify the currency of this address information using the ASSIST Online database at <https://assist.dla.mil>.

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2.4 Size.

<u>Size</u>	<u>Compressed Length</u>	<u>Width</u>	<u>Nominal Thickness</u>
Size A	10.7 meters (35')	30.5 cm (12")	19.1 mm (0.75")
Size B	10.7 meters (35')	61.0 cm (24")	19.1 mm (.75")
Size C	7.9 meters (26')	61.0 cm (24")	25.4 mm (1.00")
Size D	50.3 meters (165')	101.6 cm (40")	9.4 mm (0.37")
Size E	50.3 meters (165')	91.4 cm (36")	9.4 mm (0.37")
Size F	39.6 meters (130')	76.2 cm (30")	12.7 mm (0.50")
Size G	31.7 meters (104')	50.8 cm (20")	12.7 mm (0.50")
Size H	18.3 meters (60')	50.8 cm (20")	25.4 mm (1.00")
Size I	61.0 meters (200')	50.8 cm (20")	6.4 mm (0.25")
Size J	30.5 meters (100')	91.4 cm (36")	25.4 mm (1.00")
Size K	91.4 meters (300')	61.0 cm (24")	5.1 mm (0.20")
Size L	61.0 meters (200')	61.0 cm (24")	6.4 mm (0.25")
Size M	76.2 meters (250')	61.0 cm (24")	6.4 mm (0.25")

3. SALIENT CHARACTERISTICS.

3.1 Construction and workmanship. The cushioning material shall be composed of cellulosic material and shall be constructed in any manner which ensures compliance with all 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.

3.2 Length and width. The rolls or multifold units of the cushioning material shall have a length not less than 98 percent of the specified length. The width shall be as specified with a tolerance of ± 6.35 mm ($\pm 1/4$ inch). Unless otherwise specified in the contract or purchase order, the distance between rows of perforations shall be 76.2 mm (30 inches) with a tolerance of ± 2.54 cm (± 1 inch).

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3.3 Physical properties. The cushioning material shall meet all of the requirements of this commercial item description. All tests, except the expansion test, shall be performed on fully expanded cushioning material.

3.3.1 Thickness. The measured thickness shall be not less than 85 percent of the nominal thickness (see 2.4) when tested as specified in 5.2.2.

3.3.2 Strain. The strain limit shall be not less than 50 or greater than 75 percent when tested as specified in 5.2.3.

3.3.3 Expansion. The cushioning material when longitudinally compressed shall expand not less than 4.8 times its compressed length without rupture of the plies when tested as specified in 5.2.4.

3.3.4 Absorbency capacity. The grade I cushioning material's water/fiber ratio shall be not less than 14 when tested as specified in 5.2.5. The grade II cushioning material's water/fiber ratio shall be not greater than 3, when tested as specified in 5.2.5.

3.3.5 Tensile Strength. The tensile strength in each direction shall be not less than that specified in table I, when tested as specified in 5.2.6.

TABLE I. Tensile strengths.

Nominal Thickness	Low Strength Tensile	Medium Strength Tensile	High Strength Tensile
25.4 mm (1.00")	4.448N (1.00 lb)	26.689N (6.00 lb)	177.929N (40.00 lb)
19.1 mm (0.75")	3.336N (0.75 lb)	20.017N (4.50 lb)	133.447N (30.00 lb)
12.7 mm (0.50")	2.224N (0.50 lb)	13.345N (3.00 lb)	88.964N (20.00 lb)
9.4 mm (0.37")	1.646N (0.37 lb)	9.875N (2.22 lb)	65.834N (14.80 lb)
6.4 mm (0.25")	1.112N (0.25 lb)	6.672N (1.50 lb)	44.482N (10.00 lb)
5.1 mm (0.20")	0.890N (0.20 lb)	5.338N (1.20 lb)	35.586N (8.00 lb)

* N - Newtons

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

5. PRODUCT CONFORMANCE.

5.1 Product conformance. The products provided shall meet the salient characteristics of this commercial item description, conform to the producer's own drawings, specifications, standards, and quality assurance practices, and be the same product offered for sale in the commercial market. The Government reserves the right to require proof of such conformance.

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5.2 Inspection requirements.

5.2.1 Sampling. Samples shall be selected for inspection in accordance with ASQ Z1.4, using the plans specified in table II (see 7.4). 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 in the contract or purchase order every lot shall be tested.

TABLE II. Sampling.

Inspection Type	Inspection Level	Sample Unit	Required Paragraph
Construction, Workmanship, Length & Width	S-3	Roll or Multifold Unit	1A 1B
Physical Properties	S-1	Roll or Multifold Unit	1C

5.2.2 Thickness test. From each sample unit make a 2.54 cm (1 inch) high stack of 10.2 ± 0.32 cm ($4 \pm \frac{1}{8}$ inch) square pieces of the cushioning material. If the material is 2.54 cm (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 1.52 ± 1.27 cm ($6 \pm \frac{1}{2}$ inch) square flat load plate that weighs 181.4 ± 22.7 grams (0.40 ± 0.05 lbs) on top of this stack. After 1 minute, measure the vertical distance of the stack to the nearest 0.80 mm ($\frac{1}{32}$ 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:

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

5.2.3 Strain test. Take each stack of cushioning material prepared for the thickness test (see 5.2.2) 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:

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

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5.2.4 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 ($4 \pm \frac{1}{4}$ inch \times $14 \pm \frac{1}{4}$ inch) specimen of compressed cushioning material on a level surface. Place reference marks along the length of the specimen 25.4 ± 0.64 cm ($10 \pm \frac{1}{4}$ inch) apart. Clamp a 10.2 cm (4 inches) wide end. Apply a gradual force and 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:

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

5.2.5 Absorbency capacity test. Weigh out 0.1 gram (nearest 0.01g) a 104.8 ± 3.18 cm ($4\frac{1}{8} \pm \frac{1}{8}$ inch) square piece of material having a thickness of not less than 12.7 mm ($\frac{1}{2}$ inch). This is the dry weight. Material with thickness less than 12.7 mm ($\frac{1}{2}$ inch) shall be stacked to at least 12.7 mm ($\frac{1}{2}$ inch) and stapled with pre-weighed staples at the four corners. Place the 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 ($\frac{1}{2}$ inch) mesh screen which is 15.2 cm (6 inches) square. Drain in a horizontal position for 1 minute and weigh as specified herein. This is the wet weight. Calculate the absorbing capacity follows:

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

5.2.6 Tensile strength test. Two individual 10.2 ± 0.32 cm ($4 \pm \frac{1}{8}$ inch) square specimens shall be prepared from each sample unit. Place one specimen between two clamps that are 5.1 cm (2 inches) apart. The clamps shall have flat faces, of at least 5.1×10.2 cm (2 \times 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.

5.2.7 Flame spread index test. The cushioning material shall be tested as specified in ASTM E162, at least every 12 months, or whenever the manufacturing process changes if less than 12 months.

5.2.8 Specific Optical Density Test. The cushioning material shall be tested as specified in ASTM E662, at least every 12 months, or whenever the manufacturing process changes if less than 12 months.

6. PACKAGING. Preservation, packing, and marking shall be as specified in the contract or purchase order.

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7. NOTES.

7.1 Part Identification Number (PIN). The following PIN procedure is for government purposes and does not constitute a requirement for the contractor.

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Example of medium tensile strength, water resistant, 18.3 m (60') long, 50.8 cm (20") wide, 25.4 mm (1") thick roll of material.

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- A- Size A - Compressed length 10.7 meters (35'); width 30.5 cm (12"); Nominal thickness 19.1 mm (0.75")
 - B- Size B - Compressed length 10.7 meters (35'); width 61.0 cm (24"); Nominal thickness 19.1 mm (.075")
 - C- Size C - Compressed length 7.9 meters (26'); width 61.0 cm (24"); Nominal thickness 25.4 mm (1.00")
 - D- Size D - Length 50.3 meters (165'); width 101.6 cm (40"); Nominal thickness 9.40 mm (0.37")
 - E- Size E - Length 50.3 meters (165'); width 91.4 cm (36"); Nominal thickness 9.40 mm(0.37")
 - F- Size F - Length 39.6 meters (130'); width 76.2 cm (30"); Nominal thickness 12.7 mm (0.50")
 - G- Size G - Length 31.7 meters (104'); width 50.8 cm (20"); Nominal thickness 12.7 mm (0.50")
 - H- Size H - Length 18.3 meters (60'); width 50.8 cm (20"); Nominal thickness 25.4 mm (1.00")
 - I- Size I - Length 61.0 meters (200'); width 50.8 cm (20"); Nominal thickness 6.4 mm (0.25")
 - J- Size J - Length 30.5 meters (100'); width 91.4 cm (36"); Nominal thickness 25.4 mm (1.00")
 - K- Size K - Length 91.4 meters (300'); width 61.0 cm (24"); Nominal thickness 5.1 mm (0.20")
 - L- Size L - Length 61.0 meters (200'); width 61.0 cm (24"); Nominal thickness 6.4 mm (0.25")
 - M- Size M- Length 76.2 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

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7.2 Source of documents.

7.2.1 Federal Acquisition Regulation (FAR) 23.403 can be obtained online at www.acquisition.gov/far. Code of Federal Regulation 29 CFR 1910.1200 is available from www.gpoaccess.gov/cfr/. Both the FAR and CFR can also be obtained from the Superintendent of Documents, U.S. Government Printing Office, Washington, DC, 20402.

7.2.2 Federal Standards are available online at <https://assist.dla.mil/quicksearch/> or <https://assist.dla.mil> or from the Standardization Document Order Desk, 700 Robbins Avenue, Building 4D, Philadelphia, PA 19111-5094.

7.2.3 ASTM Standards are available online at <http://www.astm.org> or from the American Society for Testing and Materials, 100 Barr Harbor Dr., Conshohocken, PA, 19428-2959.

7.2.4 American Society for Quality (ASQ) documents are available at <http://www.asq.org> or from the American Society for Quality, 600 Plankinton Avenue, Milwaukee, WI 53203.

7.3 National Stock Numbers (NSNs).

NSN	Grade	Class	Style	Size
8135-00-664-6948	2	B	1	G
8135-00-849-7847	2	A	1	J
8135-00-989-9889	2	B	1	C
8135-01-507-7923	2	C	3	F

7.4 Ordering data. The contract or order should specify the following:

- a) Grade, class, style and size required.
- b) Packaging, packing and marking required.
- c) Addresses for submission of MSDSs (see 7.5).
- d) An Acceptable Quality Level of 2.5 percent defective.

7.5 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.

7.6 Subject term (key word) listing.

Packing
Water Absorbent
Water Resistant

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CONCLUDING MATERIAL

Custodians:

Army - AR
Navy - AS
Air Force - 69

Preparing activity:

Navy-AS

(Project 8135-2010-003)

Review activities:

Army - AT, CR4, GL, MI, SM
Air Force - 99
DLA - SS
Other - DS

NOTE: The activities listed above were interested in this document as of the date of this document. Since organizations and responsibilities can change, you should verify the currency of the information above using the ASSIST Online database at <https://assist.dla.mil>.