

DDD-G-001799 (GSA-FSS)

December 20, 1972

## INTERIM FEDERAL SPECIFICATION

### CARPET, SQUARES, PILE SURFACE, TILE TYPE, WITH OR WITHOUT ATTACHED CUSHION

This Interim Federal Specification was developed by the 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 requirements for carpet squares (tile type) with pile surface with or without attached cushioning.

#### 1.2 Classification.

1.2.1 Classes and subclasses. The carpet squares shall be of the following classes and subclasses:

Type I - Single level loop pile.

- Class 1 - (20 oz./sq. yd. pile, 54 tufts/sq. in.)
- Class 2 - (28 oz./sq. yd. pile, 54 tufts/sq. in.)
- Class 3 - (34 oz./sq. yd. pile, 48 tufts/sq. in.)
- Class 4 - (36 oz./sq. yd. pile, 70 tufts/sq. in.)
- Class 5 - (20 oz./sq. yd. pile, 80 tufts/sq. in.)
- Class 6 - (29 oz./sq. yd. pile, 100 tufts/sq. in.)

Type II - Multilevel loop pile.

- Class 1 - (21 oz./sq. yd. pile.)
- Class 2 - (30 oz./sq. yd. pile.)

Type III - Cut pile.

- Class 1 - (26 oz./sq.yd.pile.)
- Class 2 - (35 oz./sq.yd.pile.)

Type IV - IV Multilevel cut and loop pile.

- Class 1 - (44 oz./sq. yd. pile.)

#### 2. APPLICABLE DOCUMENTS

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

##### Federal Specifications:

- PPP-B-636 - Box, Fiberboard.
- PPP-B-640 - Boxes, Fiberboard, Corrugated, Triple Wall.

##### Federal Standards:

- Fed. Test Method Std. 191 - Textile Test Methods.
- Fed. Std. No. 123 - Marking for Domestic Shipment (Civilian Agencies).

Fed. Test Method Std. No. 501 - Floor Coverings, Resilient, Nontextile:  
Sampling and Testing.

FSC 7220

DDD-C-001799 (GSA-FSS)

(Activities outside the Federal Government may obtain copies of Federal Specifications, Standards 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 Business Service Center 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, WA.)

(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.)

#### Military Standards:

- MIL-STD-105 - Sampling Procedures and Tables for Inspection by Attributes.
- MIL-STD-129 - Marking for Shipment and Storage.
- MIL-STD-147 - Palletized and Containerized Unit Loads 40 x 48" Pallets Skids, Runners or Pallet-Type Base.

(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 documents form a part of this specification to the extent specified herein. Unless otherwise indicated, the issue in effect on date of invitation for bids or request for proposal shall apply:

#### Federal Trade Commission.

##### Rules and Regulations Under the Textile Fiber Products Identification Act.

(Copies may be obtained without charge from the Federal Trade Commission, Washington, D. C. 20580.)

#### American Society for Testing and Materials (ASTM) Standards:

- D-297 - Chemical Analysis of Rubber Products.
- D-418 - Woven and Tufted Pile Floor Covering.
- D-1116 - Resistance of Pile Floor Coverings to Attack by Black Carpet Beetle Larve.
- D-1335 - Tuft Bind of File Floor Coverings.

(Application for copies should be addressed to the American Society for Testing and Materials, 1916 Race Street, Philadelphia, PA. 19103.)

#### American Association of Textile Chemists and Colorists.

- AATCC-8 - Colorfastness to Crocking.

(Application for copies should be addressed to the American Association of Textile Chemists and Colorists, P. O. Box 12215, Research Triangle Park, NC 27709.)

National Motor Freight Traffic Association, Incorporated, Agent:

National Motor Freight Classification

(Application &or copies should be addressed to the American Trucking Association, Inc., Tariff Order Section, 1616 P Street, N.W., Washington, D.C. 20036.)

DDD-C-001799 (GSA-FSS)

Uniform Classification Committee, Agent:

Uniform Freight Classification

(Application for copies should be addressed to the Uniform Classification Committee, Tariff Publishing Officer, Room 203, Union Station, 516 West Jackson Blvd., Chicago, Illinois 60606.)

### 3. REQUIREMENTS

3.1 Preproduction sample. When specified (6.2), a preproduction sample of at square shall be submitted to the contracting officer for approval.

3.2 Standard sample. When a standard sample is available, the finished carpet square shall match the standard sample for color and appearance and shall be equal to or better than the standard sample with respect to all characteristics for which the standard sample is referenced (6-3).

3.3.1 Pile yarn. The pile yarn shall be made of 100 percent wool, nylon, acrylic, modacrylic, polyester or polypropylene fiber or blends of these fibers in yarn exclusive of ornamentation and static control materials. Polyvinyl chloride fiber may be used in a blend not to exceed a maximum of 45 percent. Not less than 20 percent of any of the above fibers shall be used when blended with other fibers and such blends cannot consist of more than two fibers. Unless otherwise specified (6.2), spun yarn shall be at least two ply. The required pile shall be as specified (6.2), except as indicated in table I. Fiber denier and staple length specified in this document are subject to, normal fiber manufacturing variances.

3.3.1.1 Wool. Wool shall be thoroughly scoured carpet type fiber which has never been reclaimed from any woven, tufted, knitted, or felted products. The wool yarn shall contain a minimum of 95% wool based on the original dry weight of the specimen when tested as specified in 4.3.1.

3.3.1.2 Staple nylon. Staple nylon shall be carpet type fiber with a minimum fiber size of 15 denier and of uniform fiber length which has never been reclaimed from any woven, tufted, knitted, or felted products. For level loop carpet squares, the staple length shall be a minimum of 5 inches and the finished yarn shall contain a minimum of 3.5 turns per inch in the singles, and a minimum of 3.0 contain not more than 2.0 percent chloroform soluble material when tested as specified in 4.3.1.

3.3.1.3 Filament nylon. Filament nylon shall be continuous filament high bulk or textured carpet type yard. Individual filament size shall be a minimum of 15 denier. The finished yarn shall contain not more than 2.0 percent chloroform soluble material when tested as specified in 4.3.1.

3.3.1.4 Staple acrylic. Staple acrylic shall be carpet type fiber with a minimum fiber size of 15 denier and of uniform fiber length which has never been reclaimed from, any, woven, knitted, tufted, or felted products. The finished yarn shall contain not more than 2.0 percent chloroform soluble material when tested as specified in 4.3.1.

3.3.1.5 Staple modacrylic. Staple modacrylic shall be carpet type fiber with a minimum fiber size of 15 denier and of uniform fiber length which has never been reclaimed from any woven, tufted, knitted, or felted products. The finished yarn shall contain not more than 2.0 percent ether soluble material when tested as specified 4.3.1.

3.3.1.6 Polyester. Polyester shall be carpet type fiber with a minimum

fiber size of 12 denier and of uniform fiber length which has never been reclaimed from any woven, tufted, knitted, or felted products. For level loop carpet, the staple length shall be a minimum of 6 inches and the finished yarn shall contain a minimum of 3.5 turns per inch in the singles and a minimum of 3.0 turns per inch in the ply. The finished yarn shall contain not more than 2.0 percent chloroform soluble material when tested as specified in 4.3.1.

3.3.1.7 Filament Polypropylene olefin. Filament polypropylene olefin shall be continuous filament high bulk or textured carpet type yarn. Individual filament size shall be a minimum of 15 denier. The finished yarn shall contain not more than 2.0 percent of cold isopropanol soluble material when tested as specified in 4.3.1.

DDD-C-001799 (GSA-FSS)

3.3.1.8 Staple polypropylene olefin. Staple polypropylene olefin shall be carpet type fiber with a minimum fiber size of 15 denier and a minimum staple length of 6 inches, which has never been reclaimed from any woven, tufted, knitted, or felted products. The finished yarn shall contain not more than 2.0 percent cold isopropanol soluble material. When tested as specified in 4.3.1. For level loop carpet, the finished yarn shall contain a minimum of 3.5 turns per inch in the singles and a minimum of 3.0 turns in the ply.

3.3.1.9 Staple polyvinyl chloride. Staple polyvinyl chloride fiber shall be carpet type with a minimum fiber size of 15 denier or coarser. The finished yarn shall contain not more than 2.0 percent cold isopropanol soluble material when tested as specified in 4.3.1.

3.3.2 Backing yarns and backing material. The backing yarns or backing material, as applicable, shall be made of vegetable or synthetic fibers. At the option of the contracting officer, the backing yarns or backing material made of synthetic fibers only may be specified (6.2).

3.3.3 Backing reinforcement. When a tufted carpet square is furnished without attached cushioning, on backing reinforcement shall be used which shall be a woven or knitted fabric weighing not less than 6.0 ounces per square yard or a nonwoven polypropylene fabric weight not less than 3.5 ounces per square yard. Back reinforcement shall be furnished with tufted construction, when no attached cushioning is required.

3.4 Construction. Construction shall conform to the requirements specified in 3.5. The carpet squares shall be furnished with or without cushioning, as specified (6.2). When attached cushioning is specified, all carpet squares shall be coated (3.4.2) on the back or floor side prior to attachment of the cushioning and the cushioning shall conform to the requirements specified in 3.4.1, as applicable. The cushioning shall cover the entire carpet square, but shall not extend beyond the pile surface edges. All carpet square edges shall be straight and corners squared. All carpet squares with attached cushioning furnished under a contract shall have cushioning made of the same material and the cushioning shall be of one thickness. The cushioning attached to a carpet square shall be of uniform thickness, except for normal manufacturing variances. The tufts shall be as firmly secured at the edges of the carpet squares as in other areas of the carpet squares. The carpet square shall be constructed to lay flat on a flat surface, without any indication of curling or lumpiness or unevenness of the backing materials or attached cushioning, as applicable.

3.4.1 Attached cushioning. When cushioning is specified, the cushioning shall be rubber or vinyl as specified in the contract or order (6.2).

3.4.1.1 Rubber cushioning. When attached rubber cushioning is specified, the compound used in making the rubber cushioning shall be made from natural or synthetic latex or a mixture of natural and synthetic latices. The cushioning shall be free of objectionable odor and shall have a skin on the floor side when affixed to the carpet and rug. The rubber cushioning shall be class 1, class 2, or class 3 at the contractor's option as follows, unless otherwise specified (6.2):

Class 1: (Foam)

- a. Cushioning shall average not less than 1/8 inch in thickness.
- b. The weight per square yard shall be not less than 2.37 pounds.
- c. The density shall be not less than 17 pounds/cu. ft.
- d. The compression resistance shall be not less than 5 pounds per square inch.

- e. The compression set shall be not more than 15 percent.
- f. Delamination strength - more than 2 pounds per inch of width.
- g. Accelerated aging.
  - 1. Heat aging - after exposure for 24 hours at 275 deg. F. the cushion, after flexing, should remain flexible and serviceable.
  - 2. Fade Ometer - after 20 hours exposure to the Fade-Ometer, the cushion shall show only slight discoloration or crazing.
- h. The maximum ash content of the cushion shall be 50 percent.



## Class 2: (Foam or sponge)

- a. Cushioning shall average not less than 3/16 inch in thickness.
- b. The weight per square yard shall be not less than 3.50 pounds nor more than 4.25 pounds.
- c. The compressibility shall be not less than 5 pounds nor more than 9 pounds.
- d. The compression set shall be not more than 15 percent.
- e. Cushioning shall tear before pulling free from carpet in adherence test.
- f. When subjected to an accelerated aging test, the cushion shall not deteriorate.

## Class 3: (Foam or sponge)

- a. Cushioning shall average not less than 0.090 inch in thickness.
- b. The weight per square yard shall be not less than 3.50 pounds.
- c. The compressibility be not less than 12 pounds per square inch.
- d. The compression set shall be not more than 10 percent.
- e. Cushioning tear before pulling free from carpet in adherence test.
- f. Accelerated aging.

3.4.1.2 Vinyl cushioning. The vinyl cushioning shall be suitably compounded virgin polymer or copolymer of vinyl chloride resin, plasticized with compatible, primary plasticizers only. Virgin polymer shall be defined as a polymer or copolymer that has not been processed into a finished product prior to use in the cushioning. Primary plasticizers shall be defined as plasticizers which are individually and totally compatible with the polymers or copolymers of vinyl chloride resin. The compound shall be uniform and free from objectionable odor. The vinyl cushioning shall be class 1 or class 2 as specified (6.2).

## Class 1: (Foam or sponge type)

- a. Cushioning shall average not less than 0.125 inch in thickness.
- b. The weight per square yard shall be not less than 28 ounces per square yard.
- c. The compression resistance shall be not less than 5 pounds per square inch.
- d. The compression set shall be not more than 15 percent.
- e. Delamination strength more than 2 pounds per inch of width.
- f. Accelerated weathering shall not crack, become stiff and brittle or soft and tacky and shall not change color appreciably when compared to the unexposed sample after 100 hours in the weatherometer.
- g. Flexibility at 70 deg. and 30 deg. - shall not crack, flake, craze, or show any other indication of failure.
- h. The volatile matter shall not exceed 1.0 percent.

## Class 2: (Hardback)

- a. Cushioning shall average not less than 0.130 inch in thickness.
- b. The compression resistance shall be not less than 100 pounds per square inch.
- c. Delamination strength no separation of the carpet and cushioning.
- d. Accelerated weathering shall not crack, become stiffer and brittle or soft and tacky and shall not change color appreciably when compared to the unexposed sample after 100 hours in the weatherometer.
- e. Flexibility at 70 deg. and 30 deg. - shall not crack, flake,

- craze, or show any other indication of failure.
- f. Cushioning shall have a zero moisture absorbency after 4 hours submersion in water at 72 deg.
- g. The volatile matter shall not exceed 1.0 percent.

3.4.2 Back coating. The back coating compound shall be a synthetic resin or natural or synthetic latex compound. The quantity of back coating shall be that normally used in the supplier's production.

3.5 Physical requirements. The finished carpet squares shall conform to the physical requirements specified in table I.

DDD-C-001799 (GSA-FSS)

TABLE I. Physical requirements <sup>1/</sup>  
I

Type						
Description	Single level loop pile					
Class	1	2	3	4	5	6
Tufts/sq. in.	54	54	48	70	80	100
Pile weight, oz. sq. yd.	20	28	34	36	20	29
Pile height, inch:						
Minimum	0.100	0.125	0.200	0.180	0.100	0.125
Maximum	0.200	0.225	0.250	0.240	0.170	0.170
Material:						
Pile	100% filament nylon or filament polypropylene.	100% filament nylon or filament polypropylene	See 3.3.1 <sup>2/</sup>	See 3.3.1 <sup>2/</sup>	See 3.3.1	See 3.3.1
Backing	See 3.3.2	See 3.3.2	See 3.3.2	See 3.3.2	See 3.3.2	See 3.3.2
Ply or yarn twist: (turns per inch)						
Minimum	-	-	1.5	1.5	1.5	1.5
Maximum	-	-	4.5	4.5	4.5	4.5

<sup>1/</sup> The weights given in table I are exclusive of back coating. Tolerance of minus 4.0 percent will be allowed for pile weight only. All other requirements shown, unless otherwise specified, are minimum.

<sup>2/</sup> Excluding nylon, nylon blends, polypropylene and polypropylene blends.

DDD-C-001799 (GSA-FSS)

TABLE I. Physical requirements <sup>1/</sup> continued

Type	II				III		IV	
Description	Multilevel loop pile				Cut pile		Multilevel cut and loop pile	
Class	1	2			1	2	1	
Tufts/sq. in.	60	60			60	35	58	
Pile weight, oz. sq. yd.	21	30			26	35	44	
Pile height, inch:								
	<u>High</u>	<u>Low</u>	<u>High</u>	<u>Low</u>			<u>High</u>	<u>Low</u>
Minimum	0.125	0.080	0.130	0.090	0.200	0.400	0.340	0.120
Maximum	0.200	0.120	0.400	0.125	0.300	0.600	0.400	0.150
Material:								
Pile	100% filament nylon or filament polypropylene		See 3.3.1 <sup>2/</sup>		100% staple or filament nylon or nylon blends.		See 3.3.1	
Backing	See 3.3.2		See 3.3.2		See 3.3.2		See 3.3.2	
Ply or yarn twist: (turns per inch)								
Minimum	-	1.5			1.5	1.5	1.5	
Maximum	-	4.5			4.5	4.5	4.5	

<sup>1/</sup> The weights given in table I are exclusive of back coating. Tolerance of minus 4.0 percent will be allowed for pile weight only. All other requirements shown, unless otherwise specified, are minimum.

<sup>2/</sup> Excluding nylon, nylon blends, polypropylene and polypropylene blends.

DDD-C-001799 (GSA-FSS)

3.6 Backing reinforcement adherence. The backing reinforcement (3.3.3) adherence shall have a strip requirement of a minimum of 2.0 lbs. per inch of width when tested as specified in 4.4.

3.7 Tuft bind. The tuft bind for the finished type I and II carpet squares shall be not less than, 100 ounces, except that when class 3 attached rubber cushioning only is specified in the contract or order the tuft bind shall be not less than 200 ounces and when class 2 attached vinyl cushioning only is specified in the contract or order the tuft bind shall be not less than 160 ounces. The tuft bind for shed finished type III and type IV carpet square shall be not less than 50 ounces.

3.8 Color and matching. The color of the carpet square shall be as specified (6.2) and shall match the standard sample, when available, under natural (north sky) daylight or artificial daylight having a color temperature of 7500 deg. Kelvin (K.) and shall be a good approximation to the standard sample under incandescent lamplight at 2800 deg. K. When tested as specified in 4.5.15.

3.8.1 Colorfastness. The carpet square shall show fastness to light and wet and dry crooking equal to or better than the standard sample. When no standard sample is established, the carpet square shall show good fastness to wet and dry crooking and light. They shall show a rating of good for light colors after 20 standard fading hours (2000 Langleys), and for dark colors after 40 standard fading hours (4000 Langleys). Testing shall be as specified in 4.4.

3.9 Size. The carpet square shall be 12 inches by 12 inches, 18 inches by 18 inches, 24 inches by 24 inches or 36 inches by 36 inches, as specified (6.2). The tolerance shall be plus or minus 1/64 inch for carpet squares up to 24 by 24 inches in size and plus or minus 1/32 inch for carpet squares larger than 24 by 24 inches in size.

3.10 Shrinkage. The shrinkage (immersion) in either the warp or filling direction of the carpet square with attached vinyl cushion shall not exceed 0.015 inch. with attached rubber cushion shall not exceed 0.032 inch, and without attached cushion shall not exceed 0.5 inch, when tested as specified in 4.5.13.1. The shrinkage (air temperature) of any carpet square with or without cushion shall not exceed 0.015 inch when tested as specified in 4.5.13.2. Shrinkage allowances other than those specified shall be as specified in the contract or order (6.2).

3.11 Moth repellency. A moth repellent compound shall be properly applied to the wool pile component of a carpet square @ shall have an insect resistance classification of not less than "resistant" when tested as specified in 4.4.

3.12 Flame resistance. Unless otherwise specified (6.2), the flame resistance of the carpet squares shall be such that the charred portion shall not extend to within 1 inch of the edge of the hole in the flattening frame at any point. The test shall be conducted on both the face and back surface of the carpet square.

3.13 Fiber identification. Carpet squares shall be labeled, ticketed, or invoiced for fiber content in accordance with the Textile Fiber Products Identification Act.

3.14 Workmanship. Carpet squares shall conform to the quality and grade of product established by this specification. The occurrence of defects shall not exceed the applicable acceptable quality level (AQL's).

#### 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 inspection. When a preproduction sample is required, inspection shall be made of the completed end item for conformance with all provisions of this specification.

4.3 Inspection for acceptance. Inspection shall be performed in accordance with the provisions set forth in MIL-STD-105, except where otherwise indicated.

4.3.1 Inspection of components and materials. In accordance with 4.1 above, the supplier is responsible for insuring that components and materials meet the requirements of this specification. Testing shall be performed on the components listed in table II, as applicable. Except as otherwise specified, test methods referenced are specified in Fed. Test Method Std. No. 191. The sample unit shall be of sufficient size to conduct the required tests. The sample size to be as specified in table III. The lot shall be unacceptable if one or more sample units fail to meet any specified requirement.

DDD-C-001799 (GSA-FSS)

TABLE II. Component testing[1]

Component	Characteristic	Requirement Reference	Test Method
File yarn (lbs.)	Material identification	3.3.1	[2]
	Ply.	3.3.1	Visual
	Denier	3.3.1.2	4021
		3.3.1.3	
		3.3.1.4	
		3.3.1.5	
		3.3.1.6	
		3.3.1.7	
		3.3.1.8	
		3.3.1.9	
	Turns per inch.	Table I	4054
	Wool content.	3.3.1.1	2101
	Chloroform sol. material.	3.3.1.2	2611
		3.3.1.3	
		3.3.1.4	
		3.3.1.6	
	Ether sol. material.	3.3.1.5	[2]
	Isopropanol sol. material[3]	3.3.1.7	[2]
		3.3.1.8	
		3.3.1.9	
Backing yarns (lbs.) or material (yd.)	Material identification.	3.3.2	[2]
Backing reinforcement (yd.)	Weight.	3.3.3	5042
Rubber cushioning	Material identification (class 1).	3.4.1.1	[2]
	Material identification (class 2 and 3).	3.4.1.1	[2]
	Weight.	3.4.1.1	4.5.5
	Thickness.	3.4.1.1	4.5.6
	Density (class 1).	3.4.1.1	4.5.7
	Compressibility.	3.4.1.1	4.5.8
	Compression set.	3.4.1.1	4.5.9

[1] May be accepted based on supplier's certificate of compliance for all characteristics listed. The certificate shall be accompanied by actual test or other verifiable quality data.

[2] Standard commercial.

[3] Test may be conducted on the finished carpet specimens for the isopropanol sol. material characteristic.

TABLE III. Sample size

Lot size (units)	Sample size
800 or less	2
801 to 22,000	3
22,001 and over	5

4.3.2 Examination of the end item. Defects found during the visual examination shall be classified in accordance with 4.3.2.1 and 4.3.2.2.

4.3.2.1 Visual examination. The finished carpet square shall be examined for the defects listed in table IV. The inspection level shall be level I and the acceptable quality levels (AQL's) shall be 2.5 major and 6.5 total defects (major and minor combined) per 100 units. The sample unit for this examination shall be one carpet square. The lot size shall be expressed in units of carpet squares.



DDD-C-001799 (GSA-FSS)

TABLE IV. Classification of defects

Defects	Classification	
	Major	Minor
Spot or stain.		x
Not evenly constructed, affecting appearance.		x
Marks across carpet square.	x	
Discolored areas affecting appearance.		x
Any obviously objectionable streak lengthwise of weave.	x	
Tufts missing in pile.	x	
Cut, hole or tear.	x	
Cushioning (when applicable) improperly applied; poor adherence.	x	
Does not lay flat on a flat surface, indicating curling or lumpiness or unevenness of the backing materials or cushioning.	x	
Imbedded foreign matter.		x
Cushioning (when applicable) not covering the entire carpet square.	x	
Cushioning (when applicable) extending beyond the pile surface edges.	x	
Cushioning (when applicable) not made of the same material and not of the thickness for all carpet squares.	x	
Edges not cut straight.	x	
Any corner not squared.	x	
Carpet square not clean.		x
Objectionable odor.		x
Class not as specified.	x	
Tufts at edges not as firmly secured as in other areas of carpet square.	x	

4.3.2.2 Dimensional examination. The carpet squares shall be examined for defects in dimensions as specified in 3.9. The inspection level shall be S-3. The sample unit shall be one carpet square. The lot size shall be expressed in units of carpet squares. Any dimension of the carpet square not in accordance with the specified dimensions, including tolerances, shall be classified as a defect. The lot shall be rejected if one or more defects are found in the sample.

4.3.3 Inspection of preparation for delivery. An inspection shall be made to determine that the packing and marking comply with the requirements in section 5 of this specification. Defects shall be scored as indicated below. 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 lot shall be S-2 with an AQL of 4.0 defects per hundred units.

DDD-C-001799 (GSA-FSS)

Examine	Defects
Marking	Omitted; incorrect; illegible; improper size, location, or sequence, or method of application.
Material	Any component missing or damaged.
Workmanship	Inadequate application of components ouch as loose strapping, or distortion of container.
Contents	Number of tiles per container is more of lose than required. Net weight exceeds box specification requirements.

4.4 Testing of the end item. Tests shall be performed for the characteristics specified in table V. Unless otherwise specified, the physical and chemical values specified in section 3 apply to the average of the determinations made on a sample unit for test purposes in the applicable test method. The sample unit shall be the quantity of carpet square required to perform all the tests listed in table V. The lot size shall be expressed in units of carpet squares. The lot size shall be as listed in table III. The lot shall be rejected if one or more units fail to meet any requirement specified.

TABLE V. End item testing[1]

Characteristic	Requirement Reference	Test Method
Tufts per square inch.	Table I	4.5.1
Weight of pile yarn.	Table I	4.5.2
Pile height.	Table I	4.5.3
Attached rubber cushioning.		
Thickness[6]	3.4.1.1	4.5.6
Weight.	3.4.1.1	4.5.5
Compressibility.	3.4.1.1	4.5.8
Compression set.	3.4.1.1	4.5.9
Adherence.	3.4.1.1	4.5.10
Accelerated aging.	3.4.1.1	4.5.11
Ash content.	3.4.1.1	ASTM D-297
Attached vinyl cushioning:[7]		
Thickness[6].	3.4.1.2	4.5.6
Weight.	3.4.1.2	4.5.5
Compressibility.	3.4.1.2	4.5.8
Compression set.	3.4.1.2	4.5.9
Adherence.	3.4.1.2	4.5.10
Accelerated weathering.	3.4.1.2	5804[2]
Flexibility.		
70 deg. F	3.4.1.2	4.5.12
30 deg. F	3.4.1.2	6511[3][8]
Moisture absorbency.	3.4.1.2	4.5.16
Volatile matter.	3.4.1.2	9211[4][8]
Backing adherence.	3.6	4.5.4
Tuft bind.	3.7	ASTM D-1335
Colorfastness:		
to light.	3.8.1	5660[5]
to wet and dry crocking.	3.8.1	AATCC-8
Shrinkage.	3.10	4.5.13
Moth repellency.	3.11	ASTM D-1116

Flame resistance.

3.12

4.5.14

- 
- [1] May be accepted based on supplier's certificate of compliance for all characteristics listed. The certificate shall be accompanied by actual test or other verifiable quality data.
  - [2] Fed. Test Method Std. No. 191.
  - [3] Low temperature flexibility shall be tested using a 1 +/- 4 1/8 inch mandrel.
  - [4] The oven should be regulated to insure minimum air velocity.

DDD-C-001799 (GSA-FSS)

- [5] In the event of a dispute resulting from the test with method 5660, or as a result of suspected anomalous behavior of certain dye types or formulations, the contracting officer shall authorize the exposure to natural light in accordance with method 5662.
- [6] The test results for each of these characteristics shall be reported as the lot average.
- [7] Tests shall be conducted on vinyl cushioning prior to attachment to the carpet square when applicable.
- [8] Fed. Test Method Std. No. 501.
- [9] Tufts from along the edges of the carpet squares shall be included in determinations made. No tuft determination shall be more than 10 percent less than the required minimum average.

#### 4.5 Tests.

4.5.1 Tufts per square inch. Tufts per square inch shall be determined by multiplying the pitch per inch of pile yarn ends by rows of pile per inch, or the equivalent thereof. Pitch and rows per inch shall be determined in accordance with ASTM D-418. Pitch is defined as the number of pile yarn ends per inch of width in the carpet square. Rows is defined as the number of rows of tufts per inch of length (also referred to as the number of pile wires per inch for woven fabrics or stitches per inch for tufted).

4.5.2 Weight of pile yarn. The pile yarn shall be separated from other yarns (prior to attachment of cushioning) on a sample containing 16 square inches. To express weight of pile yarn, the weight of the pile shall be calculated as follows: Weight of pile yarn (ounces) in 16 square inch sample  $\times 81.0$  = weight of pile yarn in ounces per square yard.

4.5.3 Pile height. The pile height shall be determined in accordance with ASTM D-418. For a multilevel carpet square, use the following methods: A metal rule graduated in 1/100 inch approximately 3/4 inch wide and 0.040 thick shall be inserted between the lengthwise pile rows. The height of the pile in the high pile areas and in the low pile areas shall each be measured five times. Each of the measurements shall be at least 1 inch apart. The average of the five measurements in the high pile area shall be the high pile height and the average of the five measurements in the low pile area shall be in the low pile height.

4.5.4 Adherence of backing reinforcement. The adherence of backing reinforcement shall be determined in accordance with method 5100 of Fed. Test Method Std. No. 191 except as noted below. Cut finished samples, with backing reinforcement applied, three inches wide in width direction by six inches long in length direction. Strip the backing reinforcement from the test specimen for approximately 1-1/2 inches at one of the three inch wide ends. Set jaws 1 inch apart, clamp the loose end of the backing reinforcement in the lower jaw and the loose end of the carpet is the upper jaw. Start tester and record the average load required to strip the backing reinforcement. Make three tests, average results, and divide by three to secure the pounds strip per inch of width. The average shall be reported to the nearest 0.1 pound.

#### 4.5.5 Weight of cushion.

4.5.5.1 Class 1 rubber cushion. Die cut a total of six 4 inch by 4 inch square specimens from the carpet, taking two specimens from the center area and two specimens from each side area. The cut shall not be nearer than 6 inches from the outer edges of the carpet. Die cut the specimens, with the foam side against the cutting die. The specimens shall be conditioned for a minimum of 4 hours under standard conditions of 70 degrees F. (+/- 2 degrees F.) and 65 percent (+/- 2 percent) relative humidity for testing. Weigh each specimen to

the nearest milligram. Using the electric carving knife and supporting guides, separate the foam carpet backing by cutting at the line where the textile components meet the foam component. Cut as closely as possible without damaging the carpet backing components. Put aside the slabs of foam for future use. Remove the remaining foam from the carpet backing by brushing it with a stiff wire bristled brush. Weight each backing specimen to the nearest milligram. Calculate the weight of the foam for each specimen as the difference between the total weight of the carpet with foam backing and without foam backing. Report the average of the six specimens as the weight of the foam.

4.5.5.2 Class 2 rubber cushion. The specimen shall be one square yard of the finished item (with cushioning). The specimen shall be conditioned for a minimum of 4 hours under standard conditions of 70 degrees F. (+/- 2 degrees F.) and 65 percent (+/- 2 percent) relative humidity for testing. The specimen shall be weighed to the nearest 0.01 pound per sq. yd. The results from the sample units in the sample size shall be averaged and computed to the nearest 0.01 pound per sq. yd. This is the lot average weight of the finished item. A one square yard specimen of the carpet, before application of the cushioning,

DDD-C-001799 (GSA-FSS)

shall be tested for weight as specified above. The results from the sample units in the sample size shall be averaged and computed to the nearest 0.01 pounds per square yard. This is the lot average weight of the carpet before application of the cushioning. The difference between the weight before application of the cushioning and the weight of the finished item shall be the lot average weight of the cushioning and shall be reported to the nearest 0.01 pound per square yard.

4.5.5.3 Class 3 rubber cushion. The specimen shall be one square yard of the rubber cushioning. The weight shall be determined as specified in 4.5.5.2 and the results from each sample unit reported separately to the nearest 0.01 pound per sq. yd.

4.5.5.4 Vinyl cushion. The weight of the vinyl cushioning shall be determined in accordance with 4.5.5.2 or 4.5.5.3, as applicable.

#### 4.5.6 Thickness of cushion.

4.5.6.1 Class 1 rubber cushion. Mark foam cut from each specimen for identification. Using a single determination, measure the total thickness of each specimen to the nearest millimeter. The thickness gauge shall have a circular presser foot with a diameter of 1.129 +/- .001 inch. The presser foot shall be allowed to exert a pressure of 100 grams per square inch. The load shall be applied slowly without impact and the thickness shall be read immediately. The average of six readings shall be reported as the thickness of the foam.

4.5.6.2 Class 2 rubber cushion. The specimen shall be one square yard of the finished item (with cushioning). The thickness between the two plane surfaces of the specimen shall be determined under pressure of 0.100 pounds per square inch (p.s.i.) +/- 0.001 p.s.i.) distributed over a circular area 1.129 inches +/- .001 inch in diameter. Apply pressure slowly to avoid impact and protect the specimen from vibration during the test. Five readings shall be taken on the specimen and the average computed to the nearest 0.001 inch (millimeter). The results from the sample units in the sample size shall be averaged and computed to the nearest 0.001 inch (millimeter). This is the lot average thickness of the finished item. A one square yard specimen of the before application of cushioning shall be tested for thickness as specified above. The results from the sample units in the sample size shall be averaged and computed to the nearest 0.001 inch (millimeter). This is the lot average thickness of the carpet before application of the cushioning. The difference between the thickness before application of the cushioning and the thickness of the finish item shall be the average thickness of the rubber cushioning.

4.5.6.3 Class 3 rubber cushion. The specimen shall be one square yard of the rubber cushioning. The thickness shall be determined as specified in 4.5.6.2 and the results from each sample unit reported separately.

4.5.6.4 Vinyl cushion. The thickness of the vinyl cushion shall be determined in accordance with 4.5.6.1, 4.5.6.2 or 4.5.6.3, as applicable.

#### 4.5.7 Density of rubber cushion.

4.5.7.1 Class 1 rubber cushion. The density of class 1 rubber cushion is determined by the following procedure:

The average weight in grams of the six specimens measured for weight shall be converted to pounds by multiplying 0.002205. The average thickness in inches shall be converted to volume in cubic feet by

multiplying 4" x 4" x average thickness in inches by 0.0005787.

$$\text{Then: Density} = \frac{\text{Weight in pounds}}{\text{Volume in cubic feet}}$$

#### 4.5.8 Compression resistance.

4.5.8.1 Class 1 rubber cushion. Using 2" x 2" foam specimens, form piles of plied specimens approximately 1" thick. Place the plied specimens in a compression test (Instron recommended) with a circular presser foot one square inch in area (1.129" diameter), determine the total thickness of the plied specimen at a load of 100 grams per square inch. Compress the specimen to 75% of its original thickness using the 1.00 square inch presser foot and immediately determine the load required to compress the specimen this amount. This reading exclusive of the 100 gram preload, is the compression resistance of the foam. Using a second set of specimens, repeat the test to obtain a second set of values. Both values shall be averaged and the result reported as the compression resistance.



DDD-C-001799 (GSA-FSS)

4.5.8.2 Class 2 rubber cushion. The specimen shall be a one inch (2.5 cm.) square sample cut from full thickness of cushion material before adhering to the carpet. The specimen shall be compressed to 75 percent of its original thickness. Thickness shall be measured with a gauge having a circular foot one square inch (6.5 square centimeters) area under a load of 100 grams (g) (0.220 lbs.). The number of pounds required to compress the sample shall be the compressibility and shall be reported to the nearest pound.

4.5.9.3 Class 3 rubber cushion. The compression resistance of the cushion shall be determined as specified in 4.5.8.2.

4.5.8.4 Vinyl cushion. The compression resistance of the vinyl cushion shall be determined in accordance with 4.5.8.1, 4.5.8.2 or 4.5.8.3, as applicable.

#### 4.5.9 Compression Set.

4.5.9.1 Class 1 rubber cushion. Pile up 2" x 2" specimens one on another until the pile has a total thickness of approximately 1". Prepare two such piles using a total of approximately 16 of the 2" x 2" specimens for 1/8" foam and approximately 10 of the 2" X 2" specimens for 3/16" foam. Apply a load of 100 grams per square inch and determine the thickness of the piled specimens using a fixture consisting of two parallel plates that are larger than the 2" X 2" specimens and spacer bars that are equal in thickness to 50% of the thickness of the piled specimens. Compress the piled specimens of 50% of its original thickness as determined under a 100 gram per square, inch load. Place the fixture with the compressed specimens in a circulating air oven at 158" +/- 2 F. for 22 hours +/- 1/2 hour. Remove the fixture from the oven, unclamp immediately and remove the plied specimen from the fixture. After 30 minutes recovery period, remeasure the thickness of the plied specimen under a load of 100 grams per square inch. Determine the difference from the original thickness. Divide the difference by the original thickness x 100. This value is the compression set. Do the tests on both sets of specimens and report the average. When plying the specimens, place a skin side against a cut side. If the plies adhere together after the oven treatment, do not separate before measuring.

4.5.9.2 Class 2 rubber cushion. The specimen shall be 2" x 2" sample cut from the full thickness of the cushion before adhering to the carpet. The specimen shall be compressed 50 percent of its original thickness between two parallel plates. The thickness shall be measured in accordance with 4.5.7.1. The sample compressed shall be placed in a Geer oven at 158 deg. (+/- 2 deg. F.) for 22 hours (+/- 1/2 hour). At the end of the specified time, the sample shall be removed from the plates and allowed to rest at room temperature for 30 minutes. The thickness measurement shall be taken and subtracted from the original thickness. The loss in thickness shall be expressed as a percentage of the original thickness and reported to the nearest percent.

4.5.9.3 Class 3 rubber cushion. The compression set of the cushion shall be determined as specified in 4.5.9.2.

4.5.9.4 Vial cushion. The compression set of the vinyl cushion shall be determined in accordance with 4.5.9.1, 4.5.9.2 or 4.5.9.3, as applicable.

#### 4.5.10 Adherence.

4.5.10.1 Class 1 rubber cushion. From the original sample cut a 2" x 6" strip lengthwise of the carpet, one from the center, and one from each side area. Cover the foam side with self-adhering tape. Separate the foam from

the carpet for approximately 1-1/2 inches at one end of the 2 inch wide ends. A tensile tester equivalent, to that described in Method 5100 of Fed. Test Method Std. No. 191 shall be used. Set the clamps 1" apart, clamp the loose end of the attached foam in the lower clamp and the loose end of the carpet in the upper clamp. The clamps must be as wide as the strips that are being gripped. Start the tester at a speed of 12" per minute and record the five highest readings required to strip the attached foam from the carpet. Test the three specimens, average the results, and divide by two to determine the load in pounds per inch of width.

4.5.10.2 Class 2 rubber cushion. A specimen of the finished carpet with rubber cushioning attached shall be subjected to accelerated aging by exposure in a circulating air oven for 96 hours at a temperature of 96 deg.F. (+/- 2 deg. F). After removal of the sample from the oven and allowing it to cool to room temperature, grasp the base carpet with the fingers of one hand and the thickness of the rubber cushioning with the fingers of the other hand and pull firmly in opposite directions. The cushioning should tear before pulling free from the carpet.

DDD-C-001799 (GSA-FSS)

4.5.10.11 Class 3 rubber cushion. The adherence shall be determined as specified in 4.5.10.2.

4.5.10.4 Vinyl cushion. The adherence of the class 1 vinyl cushion shall be as specified in 4.5.10.1. The adherence of the class 2 vinyl cushion shall be as specified in 4.5.10.1, except that there shall be no tearing of the cushion nor separation of the carpet and cushion.

#### 4.5.11 Accelerated aging.

4.5.11.1 Class 1 rubber cushion. Place a 2" x 4" specimen of the foam, attached to the carpet, in a circulating air oven at 275 deg. F. for 24 hours. Place another 2-1/2" x 3" specimen attached to the carpet in a Fade-Ometer in accordance with method 5660 of Fed. Test Method Std. No. 191. Foam samples should withstand these exposures with no more than slight discolorations and/or surface degradation following either test. Upon flexing, a slight cracking or crazing in acceptable.

4.5.11.2 Class 2 and class 3 rubber cushion. A piece of the rubber cushion shall be placed in an oxygen bomb (not more than 1 ounce of rubber per 170 cubic inches of oxygen) at a temperature of 158 deg. F. and a pressure of 300 pounds (+/- 10 pounds) per square inch for a period of seven days. Upon removal, sample should not be sticky and should not crack when bent back upon itself.

4.5.12 Flexibility at 70 deg. F. A specimen of cushioning, not less than 4 by 4 inches shall be doubled and pressed flat or, itself in any direction with the topside outside and held in this position for a period of five minutes. At the end of the five minutes period the specimen shall be examined for breaking, cracking, or any other evidence of failure, while in the doubled and pressed flat state. The examination shall be visual and at a normal reading distance of one foot. One determination shall be performed for each sample unit and the result shall be expressed as pass or fail.

4.5.13 Shrinkage. The shrinkage shall be determined as specified in 4.5.13.1 and 4.5.13.2.

4.5.13.1 Shrinkage (immersion). A sample of the specified carpet square shall be conditioned under standard conditions as defined in Fed. Test Method Std. No. 191 for a period of 24 hours. Specimen shall then be marked and measured at three different locations in the length and width directions; each distance shall be a minimum of 18 inches, except for carpet square 18 by 18 inches or smaller, which shall have distances marked to within about 2 inches from the edges of the carpet square; immerse sample in 110 deg. F. water for about 15 minutes; mix 2 g. of sodium alkyd sulfate type of detergent with 50 g. water at 110 deg. F. and forth 20 times (10 times in each unilateral direction), and in both length and width directions; rinse well to remove majority of detergent; squeeze and dry at 125 deg. F. until bone dry; again condition under standard conditions for 24 hours.

4.5.13.2 Shrinkage (air temperature). A sample of the specified carpet square shall be conditioned under standard conditions as defined in Fed. Test Method Std. No. 191 for a period of 24 hours. Marking of the specimen shall be as specified in 4.5.13.1. Sample shall be placed on a flat surface in a room or oven at 95 deg. F. (+/- 5 deg.) for a period of 24 hours and measured for shrinkage.

$$\text{Shrinkage} = \frac{A-B}{A} \times 100$$

Where:

A = Average of initial measurement

B = Average measurements after shampooing

The shrinkage in both the length and width directions shall be reported to the nearest 0.1 percent.

#### 4.5.14 Flame resistance.

4.5.14.1 Test specimens. Each test specimen shall be a 9 +/- 1/4 inches square section of the carpet square to be tested. Eight specimens are required.

DDD-C-001799 (GSA-FSS)

#### 4.5.14.2 Apparatus.

a. Test chamber. The test chamber shall consist of an open top hollow cube made of non-combustible material 1/with inside dimensions 12 by 12 inches by 12 inches and minimum of 1/4 inch wall thickness. The flat bottom of the box shall be made of the same material as the sides and shall be easily removable. The sides shall be fastened together with screws or brackets and taped to prevent air leakage into the box during use.

NOTE: A minimum of two chambers and two extra bottoms is suggested for efficient operation.

b. Flattening frame. A steel plate, 9 by 9 inches, 1/4 inch thick with a 8 inch diameter hole in its center is required to hold the carpet square flat during the course of the test. It is recommended that one be provided for each test chamber.

c. Standard igniting source. No. 1588 methenamine timed burning tablet or an equal tablet. These tablets shall be stored in a desiccator over a desiccant for 24 hours prior to use. (Small quantities of sorbed water may cause the tablets to fracture when first ignited. If a major fracture occurs, any results from that test shall be ignored, and it shall be repeated.)

d. Circulating air oven. A forced circulation drying oven capable of removing the moisture from the specimens when maintained at 105 deg.C. (122 deg. F.) for two hours.[2]

e. Desiccating cabinet. An airtight and moisture-tight cabinet capable of holding the floor covering specimens horizontally without contacting each other during the cooling period following drying, and containing silica gel desiccant.

f. Gloves. Non-hygroscopic gloves (such as rubber polyethylene) for handling the sample after drying, and raising the pile on specimens prior to testing.

g. Hood. A hood capable of being closed and having its draft turned off during each test and capable of rapidly removing the products of combustion following each test. The front or sides of the hood should be transparent to permit observation of the tests in progress.

h. Mirror. A small mirror mounted above each test chamber at an angle to permit observation of the specimen from outside of the hood.

i. Vacuum cleaner. A vacuum cleaner to remove all loose material from each specimen prior to conditioning. All surfaces of the vacuum cleaner contacting the specimen shall be flat and smooth.

#### 4.5.14.3 Procedure.

a. Cutting, and when specified, washing procedure if fire retardant treated. Cut eight 9 +/- 1/14 inch square specimens from the carpet squares to be tested. Note: If the carpet square has had a fire-retardant treatment, or is made of fibers which have had a fire-retardant treatments and when specified in the contract or order (6.2), the selected sample or oversized specimens thereof shall be washed, prior to cutting of test specimens, 10 times under the washing and drying procedure prescribed in Method 124-1967 of the American Association of Textile Chemists and Colorists (washing procedure 6.2 (III) with a water temperature of 60 deg. +/- 2.8 deg. C. (140 deg. +/- 5 deg. F.), drying procedure 6.3.2 (B), maximum load 3.64

kg. (8 pounds), unless otherwise specified.

b. Conditioning. Clean each specimen with the vacuum cleaner until it is free of all loose ends left during the manufacturing process and from any material that may have been worked into the pile during handling.[3] Care must be exercised to avoid "fuzzing" of the pile yarn.

Place the specimens in the drying oven in a manner that will permit free circulation of the air at, 105 deg. C. (221 deg.F.) around them for 2 hours.[4] Remove the specimens from the oven with gloved hands and place them horizontally in the desiccator with traffic surface up and free from contact with each other until cooled to room temperature, but in no instance less than 1 hour.

c. Testing. Place the test chamber in the draft-protected environment (hood with draft off) with its bottom in place. Wearing gloves, remove the test specimen from the desiccator and brush its surface with a gloved hand in such a way as to raise its pile. Place the specimen on the center of the floor of the test chamber, traffic surface up, exercising care that the specimen is horizontal and flat. Place the flattening frame on the specimen and position a methenamine tablet on one of its flat sides in the center of the 8 inch hole.

Ignite the tablet by touching a lighted match or an equivalent igniting source carefully to its top. If more than 2 minutes elapse between the removal of the specimen from the desiccator and the ignition of the tablet, the conditioning must be repeated.

DDD-C-001799 (GSA-FSS)

Continue each test until one of the following conditions occurs:

- (1) The last vestige of flame or glow disappears. (This is frequently accompanied by a final puff of smoke.)
- (2) The flaming or smoldering has approached within 1 inch of the edge of the hole in the flattening frame at any point.

When all combustion has ceased, ventilate the hood and measure the shortest distance between the edge of the hole in the flattening frame and the charred area. Record the distance measured for each specimen.

Remove the specimen from the chamber and remove any burn residue from the floor of the chamber. Before proceeding to the next test, the floor must be cooled to normal room temperature or replaced with one that is at normal room temperature.

After completion of the testing on the specimens with the traffic surface up, the same testing shall be performed on the specimen except that the back surface shall be up and tested with the methenamine tablet.

d. Report. The number of specimens of the eight tested in which the charred area does not extend within 1 inch of the edge of the hole in the flattening frame shall be reported.

c. Interpretation of results. If the charred area does not extend to within 1 inch of the edge of the hole in the flattening frame at any point for at least seven of the eight specimens, the carpet square meets the acceptance criterion: That is, at least seven of the eight specimens must meet the acceptance criterion when tested the traffic surface up and at least seven of the eight specimens must meet the acceptance criterion when tested with the back surface up.

Footnotes:

- [1] 6.35 mm. (1/4 inch) cement asbestos board is a suitable material.
- [2] Option 1 of ASTM D 2654-67T, Methods of Test for "Amount of Moisture in Textile Materials" describes a satisfactory oven.
- [3] The vacuum cleaning described is not intended to simulate the effects of repeated vacuum cleaning in service.
- [4] If the specimens are moist, permit them to air dry at laboratory conditions prior to placement in the oven.

4.5.15 Color matching test. A test specimen at least 8 inches square shall be mounted at an angle 45 deg. to the horizontal and compare with the standard sample, or the approved color sample furnished, similarly mounted under the light conditions specified in 3.7. When an artificial light source is used it shall be placed so that its rays strike the sample normal to its surface. The viewing distance shall be 18 to 24 inches.

4.5.16 Moisture absorbency. A sample of the cushion shall be subjected to the moisture absorbency test by submersion in water at 72 deg.F. for a minimum of 4 hours. The sample shall be immediately wiped off gently with an absorbent fabric and then weighed. The difference between this weight and the weight of the sample prior to submersion shall be the moisture, absorbency.

4.6 Inspection of preparation for delivery. An inspection shall be made

to determine that the packing and marking comply with the requirements in section 5 of this specification. Defects shall be scored in accordance with Table VI. Sampling shall be in accordance with MIL-STD-105. Defects of closure listed shall be examined on shipping containers fully prepared for delivery. The lots size shall be the number of shipping containers in the end item inspection lot. The inspection lot shall be S-2 with an AQL of 4.0 defects per hundred units.



DDD-C-001799 (GSA-FSS)

Table VI. Classification of preparation or delivery for defects

Examine	Defects
Marking	Omitted; incorrect; illegible; improper size, location, or sequence, or method of application.
Material	Any component missing or damaged.
Workmanship	Inadequate application of components such as loose strapping, or distortion of container.
Contents	Number of tiles per container is more or less than required. New weight, exceeds box specification requirements.

## 5. Preparation for delivery

### 5.1 Packing. Packing shall be level A, B or C as specified (6.2).

5.1.1 Level A. The carpet squares (tile) shall be packed in quantities of 20 per box in close fitting boxes conforming to PPP-B-636, grade V3c or V3s to PPP-B-640, class 2.

The boxes shall be closed, waterproof sealed and strapped in accordance with the applicable box specification and appendix. thereto.

5.1.2 Level B. The carpet squares (tile) shall be packed in quantities of 20 per box in close-fitting boxes conforming PPP-B-636, class domestic or to PPP-B-640, class 1. Closure of boxes shall be in accordance with the applicable box specification and appendix thereto.

5.1.3 Level C. The carpet squares (tile) shall be packed in accordance with the manufacturer's standard practice, providing that this will assure carrier acceptance and safe arrival at destination in compliance with the National Motor Freight Classification rules and the Uniform Freight Classification rules.

5.2 Palletization. Unless otherwise specified (6.2) the carpet squares (tile) packed as specified 5.1 shall be palletized in accordance with MIL-STD-147.

5.3 Marking. Marking shall be in accordance with 5.3.1 or 5.3.2 as specified (6.2).

5.3.1 Civil agencies. In addition to the special markings required by 5.3.3, each box shall be marked in accordance with Fed. Std. No. 123 and shall include the size, number of pieces, coverage in square feet, pattern and shelf life.

5.3.2 Military agencies. In addition to the special markings required by 5.3.3, each box shall be marked in accordance with MIL-STD-129, and shall include the size, number of pieces, coverage in square feet, pattern and shelf life.

5.3.3 Special Markings. In addition to the markings required by 5.3.1 or 5.3.2, each box shall be marked on one side or one end with the word "UP" and arrows pointing to the top of the box in characters a minimum of one inch high.

## 6. Notes

6.1 Intended use. The carpet squares included in this specification are intended for use where removable sections may be necessary or where an overall multi-colored or patterned checkered effect may be required for floor covering. Carpet squares should be adhered to or placed on the floor in accordance with the manufacturer's recommended procedures.

DDD-C-001799 (GSA-FSS)

6.2 Ordering data. Purchaser should select the preferred options permitted herein and should include the following information in procurement documents.

- (a) Title, number and date of this specification.
- (b) Type and class required (1.2.1).
- (c) When preproduction sample required (3.1).
- (d) Fly of yarn when necessary (3.3.1).
- (e) Pile fiber required (3.3.1).
- (f) When synthetic backing yarns or synthetic backing material only is required (3.3.2).
- (g) Specify whether with or without attached cushioning (3.4).
- (h) When attached cushioning is required, specify whether rubber or vinyl cushioning (3.4 and 3.4.1).
- (i) When attached rubber cushioning is required, if other than as specified (3.4.1.1).
- (j) When attached vinyl cushioning is required specify if class 1 or class 2 (3.4.1.2).
- (k) Size required (3.9).
- (l) Shrinkage if other than as specified (3.10).
- (m) Flame resistance requirement if other than as specified (3.12).
- (n) Specify when washing procedure is applicable, if fire retardant treated (4.514.3).
- (o) Selection of applicable levels of packing. (5.1).
- (p) Palletization, if other than as specified (5.2).
- (q) Type of marking required (5.3).

6.3 For access to the standard sample, when available, address the procuring office issuing.

6.4 Special flame resistance. Federal agencies responsible for hospitals and medical facilities are directed to the publication General Standards of Construction and Equipment for Hospital and Medical Facilities, issued by the U.S. Department of Health, Education, and Welfare. This publication contains regulations relating to the implementation of the Hill-Burton program, including special construction and fire-resistive requirements.