

INCH-POUND

A-A-50199A  
July 31, 2006  
SUPERSEDING  
A-A-50199  
June 30, 1989

## COMMERCIAL ITEM DESCRIPTION

### THREAD, POLYESTER CORE, COTTON OR POLYESTER-COVERED

The General Services Administration has authorized the use of this Commercial Item Description as a replacement for MIL-T-43548 by all federal agencies.

1. SCOPE. Commercial sized thread for machine sewing of clothing and other light-medium weight textile assembly applications.

#### 2. CLASSIFICATION.

Type I - Cotton-covered

Type II - Polyester-covered

3. SALIENT CHARACTERISTICS. Each ply of the thread shall consist of a continuous, multifilament polyester end, spun with one or more ends of cotton, or high tenacity staple polyester roving to cover the multifilament polyester end. The direction of the final twist shall be "Z", unless otherwise specified. The thread shall be as specified below in Table I.

Comments, suggestions, or questions on this document should be addressed to: Defense Supply Center Philadelphia, Clothing and Textiles Directorate, Attn: DSCP Standardization Team, 700 Robbins Avenue, Philadelphia, PA 19111-5096. Since contact information can change, you may want to verify the currency of this address information using Acquisition Streamlining and Standardization Information System (ASSIST) online database at <http://assist.daps.dla.mil>.

AMSC N/A

FSC 8310

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TABLE I. Physical Characteristics

Tex <u>1/</u> (sizes)	Ply	Length per pound, (yards)	Breaking strength, lbs. (min)		Elongation % (max)
Range		Nominal	Type I	Type II	
21-24	2	20,500	1.4	1.8	30
25-30	2	16,750	2.0	2.4	30
31-35	2	13,750	2.6	3.0	30
36-45	2	11,250	3.2	3.7	30
46-60	2 or 3	9,000	4.0	4.7	30
61-70	2 or 3	7,250	5.0	6.1	32
71-105	2, 3 or 4	5,550	6.8	7.2	32
106-150	2, 3 or 4	3,850	9.9	10.8	32
151-210	2, 3 or 4	2,600	13.0	14.1	32

1/ Tex size based on weight in grams / 1,000 meters thread.

3.1 Physical Requirements: The thread shall conform to the requirements in Table II.

TABLE II. Physical requirements

Characteristic	Requirement	Test method
Tex (Ticket) Size	See Table I	ASTM D 3823
Ply	See Table I	Visual
Length/lb	See Table I	ASTM D 1907 <u>1/</u>
Breaking Strength	See Table I	ASTM D 204 <u>2/</u>
Elongation	See Table I	ASTM D 204 <u>2/</u>
Direction of Final Twist	See 3.0	ASTM D 204
Colorfastness:	3-4 min.	AATCC 61 Test 3A <u>3/</u> , <u>4/</u>
Laundering (after 3 cycles)	3-4 min.	AATCC 117 <u>3/</u>
Dry heat @ 376 <sup>0</sup> ± 6 <sup>0</sup> F	3-4 min.	AATCC 16 Option 1or 3 <u>3/</u>
Light (after 40 hrs or 170 kJ)	3-4 min.	AATCC 132 <u>3/</u> <u>5/</u>
Wet dry-cleaning (when specified)	3-4 min.	AATCC 15 <u>3/</u> <u>5/</u>
Perspiration (when specified)	3-4 min.	AATCC 169 <u>3/</u>
Weathering (after 80 hrs) (when specified)		
Fiber Content	Fiber Identification	ASTM D 276 or AATCC 20
Non- Wicking Finish (when specified)	See 3.7	See 3.7.1

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1/ In case of dispute, the length per pound of thread may be determined on the thread after removal of finish. (yards/lb =  $\frac{453.6 \times \text{\# of yards in specimen}}{\text{wgt of specimen in gm}}$ )

2/ Five determinations shall be made on the sample unit.

3/ AATCC Evaluation Procedure 1, Gray Scale for Color Change (see 3.7, 3.7.1)

4/ The color transfer cloth evaluation shall not apply. No appreciable change in shade or loss of color of the tested specimen shall be visible when compared to the untested thread.

5/ AATCC Evaluation Procedure 2, Gray Scale for Staining

3.2 Color. The color shall be as specified in the applicable end item specification or in the contract order. The dyed thread shall conform to the applicable approved shade standard. The shade of the polyester core shall approximate that of the cotton or staple polyester covering.

3.3 Labile Sulfur. Use of dyes and compounds containing elementary sulfur capable of oxidation to sulfuric acid, is not permitted.

3.4 Finish removal procedure. Before evaluation for shade matching and testing for colorfastness, except for colorfastness to wet dry cleaning, the thread shall be wet dry cleaned in accordance with AATCC-132. Excess solvent shall be removed by centrifuging or wringing. The sample shall then be rinsed in distilled water at 120° to 160°F and dried at a temperature not exceeding 180°F. The dried sample shall then be conditioned for a minimum of 4 hours prior to evaluation for shade matching or colorfastness.

3.5 Visual shade matching. The color and appearance of the finished thread, after removal of finish (see 3.4), shall match the standard sample when viewed using AATCC Evaluation Procedure 9, Option A, with sources stimulating artificial daylight D75 illuminant with a color temperature of  $7500 \pm 200$  K, with illumination of  $100 \pm 20$  foot candles, and shall be a good match to the standard sample under incandescent lamplight at  $2856 \pm 200$  K.

3.6 Finishing materials. The finished thread shall have no chemical finishes or treatments other than those commonly used, i.e. water-repellent, etc, on commercial threads which have been demonstrated to have no deleterious effects on the polyester fiber, including effects of prolonged storage. There shall be no noticeable wicking of any treatment to adjacent material when sewn. No finish or treatment shall be applied for the purpose of increasing breaking strength.

3.7 Non-wicking Finish. When specified, the thread shall be finished with a non-wicking finish uniformly applied. The finished thread shall resist the wicking of water when tested as specified 3.7.1.

3.7.1 Vertical Resistance to wicking: The thread shall be water repellent treated so that the treated thread shall resist the wicking of water for a period of not less than 2 hours when tested as follows: The test specimen shall consist of a 20 strand skein of thread in one continuous 30 yard length made on a 54 inch periphery skein reel. The skein shall be reeled under enough tension to cause the strands in the skein to lie uniformly, side by side, on the reel. The finishing end of the skein shall be tied to the starting end of the skein in such a manner that the knot will not add additional length to the reel skein. The skein shall be hung over the movable crossbar of

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a laboratory stand with the other end hanging over the vessel. The movable crossbar shall raise 28 inches or more above the base. A non-ferrous  $\frac{3}{4}$  to  $\frac{7}{8}$  ounce weight shall be placed in the lower catenary of the skein to keep it taut and straight. The skein shall be arranged so that the strands are touching each other in flat ribbon form. The vessel shall be filled to a depth of at least 5 inches with distilled water at room temperature which has been mixed with blue food coloring, (salt and wetting agent free). A piece of blotting paper shall be attached by means of a paper clip or similar clamp to one full side (20 strands) of the skein, 3 inches above the lower catenary of the skein. The position of crossbar shall be adjusted that when the skein is hung freely in the liquid, 2 inches of the skein will be immersed in the liquid and the lower edge of the blotter is 1 inch above the liquid surface. The skein shall then be slowly lowered into the dye bath and the time of entry shall be noted. Depending on the dimensions of the vessel and the length of the crossbar, several specimens can be tested at the same time in the same dye bath by handing the skeins sufficiently apart on the crossbar. The skein shall be exposed for 2 hours. The blotter shall be examined for wetting or staining at least every hour. The test shall be terminated whenever staining or wetting of the blotter is observed within the 2 hour test duration.

3.8 Put-up. Unless otherwise specified, the thread shall be put-up on holders such as commercial spools, cones, or tubes as specified in the contract. The thread shall be wound around the specified holder in one continuous piece, so that each turn and layer is free of entanglement. The outside ending of the thread shall be secured to prevent unwinding, loosening, or slippage during handling, shipping, or storage.

3.9 Labeling. Each holder shall have a label, adhered securely so as to remain in place and be clearly legible until all thread has been removed. The label shall be printed and shall include information related to length in yards, direction of twist, color, size, ply, name of thread manufacturer, weight, yards/pound and nomenclature specifying fiber and construction fiber and construction type.

3.10 Workmanship. The finished thread shall conform to the quality of product established by this document. The thread shall average not more than one full thread knot or splice per 1,000 yards. The occurrence of defects shall not exceed the contractor's own quality assurance standards and the quality assurance standards defined by the technical data in the bid package.

3.11 Toxicity. The finished fabric shall not present a health hazard when used as intended and tested as specified in 4.1

4. **REGULATORY REQUIREMENTS**. The offeror/contractor is encouraged to use recovered materials to the maximum extent practicable, in accordance with paragraph 23.403 of the Federal Acquisition Regulation (FAR).

4.1 Toxicity test. The contractor must furnish information, which certifies that the finished product is composed of materials, which have been safely used commercially or provide sufficient toxicity data to show compatibility with prolonged, direct skin contact. At a minimum, toxicity data should include results from a primary dermal irritation study in laboratory animals and a repeated insult human patch test (Modified Draize Procedure). The latter must be

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conducted under the supervision of a qualified dermatologist using at least 100 free-living individuals.

4.1.2. Toxicity documents. All finishes/chemicals used to process the garment shall be identified and accompanied by the appropriate Material Safety Data Sheet (MSDS) information. The use of chemicals recognized by the Environmental Protection Agency (EPA) as human carcinogens is prohibited.

## 5. PRODUCT CONFORMANCE PROVISIONS.

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 marketplace. The government reserves the right to require proof of such conformance.

## 6. PACKAGING.

6.1 Packaging. Preservation, packing, and marking shall be specified on the contract or order.

## 7. NOTES.

7.1 Source of Government documents. Copies of Military and Federal documents are available online at <http://assist.daps.dla.mil/quicksearch/> or from the Standardization Documents Order Desk, 700 Robbins Avenue, Philadelphia, PA 19111-5094.

7.1.1 Other Government Documents.

### FEDERAL ACQUISITION REGULATIONS (FAR).

(Available online at <http://acquisition.gov/far/index.html> or by contacting the Superintendent of Documents at 202-512-1800).

7.2 Non-Government publications.

### AMERICAN ASSOCIATION OF TEXTILE CHEMISTS AND COLORISTS (AATCC)

(Standards are available online at [www.aatcc.org](http://www.aatcc.org) or from the American Association of Textile Chemists and Colorists, P.O. Box 12215, Research Triangle Park, NC 27709-2215).

### ASTM INTERNATIONAL

(Standards are available online at [www.astm.org](http://www.astm.org) or from ASTM INTERNATIONAL, 100 Barr harbor Drive, West Conshohocken, PA 19428-2959).

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7.3 Other publications.

Principle and Methods of Toxicology, A Wallace Hayes (editor), pp 394-396, 1989.

(Copies of this document is available from Raven Press, 1185 Avenue of the Americas, New York, NY 10036.)

Marzulli, F. and H. Maibach, "Contact Allergy: Predictive Testing in Humans," Advances in Modern Toxicology, Volume 4, pp 353-372, 1977.

(Copies of this document are available from the U.S. Army Center for Health Promotion and Preventative Medicine, ATTN: MCHB-DC-TTE, Bldg., E-2100, Aberdeen Proving Ground, MD 21010-5422.)

7.4 Standard samples. Address the contracting activity issuing the invitation for bids or request for proposal. Standard samples are also available at DSCP through <http://warfighter.dla.mil> under tab "Vendor Info" then "Specifications/Pattern Request" under "Special Instructions" provide color shade, roll number and solicitation/contract number.

7.5 Ordering data.

- a. CID document number, title and revision date.
- b. Type, size and ply of thread required. (see Table I)
- c. Colorfastness properties required (3.1)
- d. Color required. (see 3.2)
- e. Put-up required. (3.7)
- f. Product conformance provisions. (see 5.1)
- g. Packaging requirements. (see 6.1)

7.6 Replacement data. The thread types covered are listed by Tex (sizes) the corresponding Ticket numbers are listed below.

Tex Sizes	Ticket Number
Range	Sizes
21-24	120
25-30	100
31-35	70
36-45	50
46-60	40
61-70	30
71-105	24
106-150	16
151-210	12

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7.7 Key words.

Assembly Applications, Textile  
Clothing  
Machine, Sewing

MILITARY INTERESTS:

Custodians:

Army – GL  
Navy – NU  
Air Force – 99

Review Activities:

Army – MD  
Navy - MC  
Air Force - 11

CIVIL AGENCY COORDINATING ACTIVITY:

GSA – FSS

PREPARING ACTIVITY:

DLA-CT

(Project 8310-2005-001)

\*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 ASSIST Online database at <http://assist.daps.dla.mil>.