INCH-POUND
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SUPERSEDING
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COMMERCIAL TEM DESCRIPTION

THREAD, POLYESTER CORE, COTTON OR POLYESTER-COVERED

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

1. SCOPE. This commercial item description covers the requirements for a polyester core, cotton or polyester covered thread. The commercial thread shall be used for machine sewing of clothing and other light-medium weight textile assembly applications.

2. CLASSIFICATION. This commercial thread will be available in the following types:

2.1 Types:

Type I – Cotton-covered
Type II – Polyester-covered

3. SALIENT CHARACTERISTICS.

3.1 General description. Each ply of the thread shall consist of a continuous, multifilament polyester end, spun with one (1) 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 in Table I and II.

Beneficial comments, recommendations, additions, deletions, clarifications, etc. and any other data that may improve this document should be sent to: DLA Troop Support Standardization Team, 700 Robbins Avenue, Philadelphia, PA 19111-5096. Since contact information can change, you may want to verify the currency of the address information using Acquisition Streamlining and Standardization Information System (ASSIST) online database https://assist.dla.mil.

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3.2 Physical characteristics requirements. The Type I and Type II thread shall conform to the physical characteristics specified in Table I when tested as specified in Table II.

TABLE I. Physical characteristics (all Types).

Tex 1/	Ply	Breaking strength (lbs), minimum		Elongation (%), maximum
		Type I	Type II	
21-24	2	1.4	1.8	30
25-30	2	2.0	2.4	30
31-35	2	2.6	3.0	30
36-45	2	3.2	3.7	30
46-60	2 or 3	4.0	4.7	30
61-70	2 or 3	5.0	6.1	32
71-105	2, 3 or 4	6.8	7.2	32
106-150	2, 3 or 4	9.9	10.8	32
151-210	2, 3 or 4	13.0	14.1	32

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

TABLE II. Physical requirements and test methods.

Characteristic	Requirement	Test method
Fiber identification	3.1	AATCC 20 or ASTM D276 (see 7.5)
Direction of twist	3.1	ASTM D204
Tex	Table I	ASTM D204
Ply	Table I	Visual
Breaking strength (lbs), (minimum)	Table I	ASTM D204 1/
Elongation (%), (maximum)	Table I	ASTM D204 1/
Colorfastness (minimum):		
Laundering after three (3) cycles	3-4	AATCC 61, Test 3A, 2/, 3/
Light (after 40 AFU or 170kJ/(m^2nm)@420nm)	3-4	AATCC 16.3 2/,
Perspiration (acid & alkaline)		
Dry heat @ 376 (±) 6°F	3-4	AATCC 15, 2/, 4/
Weathering (after 40kJ/(m^2nm) @420 nm)	3-4 3-4	AATCC 117, 2/ AATCC 169, 2/
Visual shade matching	3.3	3.3.1
Non-wicking finish	3.5.1	3.5.1.1
Toxicity	3.6	3.6.1

1/ Five (5) determinations shall be made on the sample unit.

2/ AATCC Evaluation Procedure 1, Gray Scale for Color Change.

3/ The color transfer cloth evaluation shall not apply.
4/ AATCC Evaluation Procedure 2, Gray Scale for Staining.

3.3 Color. The color shall be as specified in the applicable end item specification or in the contract order. The dyed thread shall be a good match to the applicable end item when examined in accordance with 3.3.1. The shade of the polyester core shall approximate that of the cotton or staple polyester covering.

3.3.1 Visual shade matching. The color and appearance of the finished thread shall match the standard sample when viewed using AATCC Evaluation Procedure 9, Option A, with sources simulating artificial daylight D75 illuminant with a color temperature of 7500 K (± 200) illumination of 100 (± 20) foot candles, and shall be a good match to the standard sample under incandescent A illuminant with a color temperature of 2856K (± 200).

3.4. Labile sulfur. Dyes and compounds containing elementary sulfur capable of oxidation to sulfuric acid shall not be used. Presence of labile sulfur shall be tested as specified in 3.4.1.

3.4.1 Presence of labile sulfur test. In the determination of presence of labile sulfur in textile materials with lead acetate, two (2) 1.50 (± 0.01) gram samples from each material submitted for evaluation shall be tested. Each of the two (2) samples shall be cut into very small pieces and placed into separate test tubes. The samples shall be submersed in a stannous chloride solution that contains 100 grams of stannous chloride crystals ACS in 100 milliliters of hydrochloric acid ACS (35 percent concentration) and 50 milliliters of distilled water. A filter paper wet out with a 5.0 percent lead acetate solution shall be placed over top of the test tube. The lead acetate solution contains 5.0 grams of lead acetate CP reagent grade and enough distilled water to make up a 100 milliliter solution; if the solution is not clear, add a few drops (one at a time) of glacial acetic acid until the solution is clear. The test tube containing the textile sample, stannous chloride and wet filter paper shall be heated over a low flame until the solution is boiling. The solution should not be heated for more than 15 seconds. A brown to black stain on the filter paper should be evaluated as follows:

Free - The filter paper shows no discoloration or staining of any kind.

Slight - The filter paper shows a light tan to light brown discoloration stain.

Moderate - The filter paper shows a dark brown discoloration stain.

Severe - The filter paper shows a black color stain.

3.5 Finishing materials. The finished thread shall have no chemical finishes or treatments other than those commonly used (e.g. lubricants, etc.) on commercial threads or as specified in the contract (see 3.5.1) which have been demonstrated to have no harmful effects on the fiber, including effects of prolonged storage. No finish or treatment shall be applied for the purpose of increasing breaking strength. There shall be no noticeable wicking of the treatment on the thread to adjacent material when sewn.

3.5.1 Non-wicking finish. When specified, the thread shall have a uniformly applied commercial non-wicking finish. The use of compounds containing mercury in any form shall not be used. The finished thread shall resist the wicking of water when tested as specified in 3.5.1.1.

3.5.1.1 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 a laboratory stand with the end hanging over the vessel. The movable crossbar shall rise 28-inches or more above the base. A non-ferrous 3/4 to 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 a room temperature which has been mixed with 0.05 percent 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 the 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 dyebath 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 dyebath by hanging 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 duration. Staining or wetting before the 2-hour time frame shall constitute a failure.

3.6 Toxicity. The finished thread shall not present a health hazard and shall show compatibility with prolonged, direct skin contact when tested as specified in 3.6.1. Chemicals recognized by the Environmental Protection Agency (EPA) as human carcinogens shall not be used.

3.6.1 Toxicity test. When required (see 7.7), an acute dermal irritation study and a skin sensitization study shall be conducted on laboratory animals. When the results of the studies indicate the thread is not a sensitizer or irritant, a Repeat Insult Patch Test shall be performed in accordance with the Modified Draize Procedure (see 7.2.4). If the toxicity requirement (see 3.6) can be demonstrated with historical use data, toxicity testing may not be required (see 7.7).

3.7 Put-up. Unless otherwise specified, the thread shall be put-up on holders such as commercial spools, cones, tubes, or bobbins 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.

3.8 Labeling. Each thread 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 include information related to length in yards or weight of cone, direction of twist, color, Tex size, name of thread manufacturer, and nomenclature specifying fiber Type and construction.

3.9 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.

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

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.

5.2 End item examination. The visual examination for defects shall be in accordance with ANSI/ASQ Z1.4 (see 7.2.2).

5.3 Visual examination. Thread shall be examined for the defects listed in Table III.

TABLE III. Visual examination defects.

Knots: Tex 45 and finer thread not more than one (1) thread knot per 8-ounces in singles. All other thread Tex shall average not more than one (1) full thread knot or splice per 1,000 yards.
Color: Not as specified.
Labels: Label missing, incorrect, or illegible. Required information missing from the label.
Packaging: Not packaged in accordance with the contract or purchase order

5.4 Acceptance criteria. Acceptance criteria shall be as specified in the contract or purchase order (see 7.7).

6. PACKAGING

6.1 Packaging. Preservation, packing, and marking shall be as specified in the contract or order (see 7.7).

7. NOTES

7.1 Sources of Government documents.

7.1.1 Copies of Government documents are available online at http://quicksearch.dla.mil

7.2 Sources for Non-Government Documents.

7.2.1 AATCC test methods are available online at http://www.aatcc.org

7.2.2 ANSI/ASQ Z1.4 - Sampling Procedures are available online at http://www.asq.org.

7.2.3 ASTM Standards are available online at http://www.astm.org

7.2.4 Modified Draize Procedure : Principles and Methods of Toxicology, A Wallace Hayes (editor). Copies are available online at https://www.crcpress.com.

7.3 Intended use. The threads are intended for machine sewing of clothing and other light to medium weight textile assembly applications. Treated threads with a non-wicking finish can also be used on items where water resistance of seams is required.

7.4 Standard samples. For access to standard shade samples of thread, address the contracting activity issuing the invitation for bids or request for proposal.

7.5 Certificate of compliance. The contracting activity may select to accept a certificate of compliance for stated requirement.

7.6 Changes from previous issue. Marginal notations are not used in this revision to identify changes with respect to previous issues due to the extensiveness of the changes.

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

a. Title, number, and date of this Commercial Item Description (CID)
b. Type and Tex size required (see 2.1, 3.2)
c. Color required (see 3.3)
d. When non-wicking finish is required (3.5.1)
e. When toxicity testing is required (see 3.6)
f. Put-up required if other than specified (see 3.7)
g. Product conformance provisions (see 5.1)
h. Acceptance criteria provisions (see 5.4)
i. Packaging requirement (see 6.1)

7.8 Key words.

Clothing
Machine
Non-wicking
Sewing
Textiles

MILITARY INTERESTS:

Custodian:
Army-GL
Navy- NU
Air Force- 11

Review Activities:
Army- MD
Navy- AS

CIVIL AGENCY COORDINATING ACTIVITY:

GSA-FSS

PREPARING ACTIVITY:
DLA –CT

(Project: 8310-2018-003)

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 https://assist.dla.mil/.