

INCH-POUND

A-A-55195B
10 October 2018
SUPERSEDING
A-A-55195A
7 April 1993

COMMERCIAL ITEM DESCRIPTION

THREAD, PARA-ARAMID, SPUN, INTERMEDIATE MODULUS

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 spun, para-aramid, intermediate modulus thread used for machine and hand sewing. The thread is intended for use in sewing aramid materials for construction of protective combat clothing and other flight safety equipment.

2. **CLASSIFICATION.** The spun para-aramid thread shall conform to the following types:

2.1 Types

Type I – Normal performance

Type II – High performance

3. SALIENT CHARACTERISTICS.

3.1 General description. The staple fibers shall be made from para-aramid filament having a linear density of 1.5 denier per filament. The finished thread shall conform to the requirements in Table I, II and III. Unless otherwise specified, the direction of the twist for single ply shall be “S” and for the plied thread shall be “Z”.

Beneficial comments, recommendations, additions, deletions, clarifications, etc. and any 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 and requirements. The thread shall conform to the physical characteristics specified in Table I for Type I and Table II for Type II when tested as specified in Table III.

TABLE I. Physical characteristics - Type I

Tex	Ply	Breaking strength (lbs) - Initial (min.)	Breaking strength (lbs) - After heat aging (min.)	Elongation (%) (max.)
39	2	6.0	1.80	6
59	3	8.5	3.00	6
78	4	12.0	3.25	6
98	5	16.0	4.75	6
118	6	19.0	5.75	6
138	7	22.0	6.50	6

TABLE II. Physical characteristics - Type II

Tex	Ply	Breaking strength (lbs) - Initial (min.)	Breaking strength (lbs) - After heat aging (min.)	Elongation (%) (max.)
14	2	2.0	0.5	6
16	2	3.0	1.0	6
20	2	5.0	2.0	6
39	2	9.0	3.0	6
59	3	14.0	4.0	6
78	4	20.0	6.0	6
107	3	27.0	8.0	6
125	3	31.0	9.0	6
142	4	35.0	10.0	6

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TABLE III. Physical requirements and test methods (Type I and II).

Characteristic	Requirement	Test method
Fiber identification	3.1	AATCC 20 or ASTM D276 (see 7.5)
Denier per filament	3.1	ASTM D1577
Direction of twist: Single ply	3.1	ASTM D204
Plied	3.1	ASTM D204
Tex	Table I and II	ASTM D204
Ply	Table I and II	ASTM D204 <u>1/</u>
Breaking strength (lbs.) Initial (min.) After heat aging (min.)	Table I and II Table I and II	ASTM D204 <u>2/</u> 3.3 and ASTM D204
Elongation (%) (max.)	Table I and II	ASTM D204 <u>3/</u>
Colorfastness, rating (min.) Laundering (after 3 cycles)	4	AATCC 61, 2A, <u>4/</u> , <u>5/</u> , <u>6/</u>
Visual shade matching	3.4	3.4.1
Toxicity	3.5	3.5.1

1/ One determination per sample unit shall be made and the result reported as “pass” or “fail”.

2/ At least five determinations shall be made per sample unit.

3/ To be determined simultaneously with the breaking strength.

4/ The specimens shall be dried after each laundering cycle.

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

6/ Two (2) to six (6) grams of the thread held together to form a unit for testing.

3.3 Heating aging test. Five (5) skein specimens shall be used for the heat aging test. The specimens shall be exposed for four (4) hours to a temperature of 500 (±10)°F using a circulating air oven. Upon removal, the specimens shall be conditioned at standard atmospheric conditions, ASTM D1776/D1776M for four (4) hours and then tested for breaking strength as specified in Table I and II.

3.4 Color. The color shall be as specified in the applicable end item specification or in the contract (see 7.7). The dyed thread shall be a good match to the applicable end item when examined in accordance with 3.4.1.

3.4.1 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 7500K (±200)

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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).

3.5 Finished materials. The finished thread shall have no chemical finishes or treatment other than those commonly used lubricants on commercial threads. The thread shall have a soft finish and shall contain only the minimum amount of lubricant to facilitate sewing. Only non-staining and non-flame propagating finishes commonly used shall be permitted as sewing finishes unless prior approval is obtained from the Contracting Officer which have been demonstrated to have no harmful effects of prolonged storage. No finish or treatment shall be applied for the purpose of increasing breaking strength and no finish shall be used that will diminish flame resistance. There shall be no noticeable wicking of the treatment on the thread to adjacent material when sewn.

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 requirements (see 3.5) 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 length, 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, direction of twist, or weight of cone, color, Tex, ply, name of thread manufacturer, and nomenclature specifying Type and construction.

3.8 Workmanship. The finished thread shall conform to the quality of product established by this document. 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. **REGUATORY 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).

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5. PRODUCT CONFORMANCE PROVISIONS.

5.1 Product conformance. The thread 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 IV.

Table IV. Visual examination defects.

<u>Knots:</u> Thread on holder averages more than one thread knot per eight ounces. Not in one continuous length.
<u>Winding:</u> Improperly or not firmly wound, resulting in kinks, knots, entangling, or slippage during unwinding, or otherwise affecting free unhampered unwinding of the thread.
<u>Color:</u> Not as specified.
<u>Labels:</u> Label missing, incorrect, or illegible. Required information missing from the label.
<u>Packaging:</u> 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. Preservation, packing, and marking shall be as specified in the contract or purchase 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 of Non-Government Documents.

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

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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), are available online at <https://www.crepress.com>.

7.3 Intended use. The thread is intended for sewing heat and flame resistant uniforms, equipment, or supportive end items.

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 issue 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 required (2.1, 3.2)
- c. Color required (see 3.4)
- d. When toxicity testing is required (see 3.6)
- e. Put-up required if other than specified (3.7)
- f. Product conformance provisions (5.1)
- g. Acceptance criteria provisions (see 5.4)
- h. Packaging requirement (see 6.1)

7.8 Key words.

Flame retardant
Gloves
Uniform
Jackets
Sewing
Trousers

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MILITARY INTERESTS:

Custodian:

Army-GL

Navy-NU

Air Force – 11

CIVIL AGENCY COORDINATION ACTIVITY:

GSA-FSS

PREPARING ACTIVITY: DLA- CT

(Project: 8310-2018-005)

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> .