INCH-POUND
A-A-55217C
March 21, 2019
SUPERSEDING
A-A-55217B
March 29, 2011

COMMERCIAL ITEM DESCRIPTION

THREAD, META-ARAMID, SPUN STAPLE

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

1. SCOPE. This Commercial Item Description covers the requirements for a spun staple, meta-aramid thread. The thread is used in sewing Flame Resistant (FR) protective combat clothing and flight safety equipment.

2. CLASSIFICATION. The meta-aramid spun stable thread will be in the following types.

2.1 Type.

Type I – Normal performance
Type II – Deleted

3. SALIENT CHARACTERISTICS.

3.1 General description. The thread yarn shall be made using 1.5 to 2.0 denier filament of meta-aramid fiber. The finished thread shall conform to the requirements in Table I and Table II. Unless otherwise stated, the direction of the final twist shall be "Z" for the thread. Each of the individual plies of yarn shall be initially twisted with no less than the number of turns per inch to be used in the final twist, and in the opposite direction of the final twist.

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.

AMSC N/A FSC 8310

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

TABLE I. Physical characteristics (Type I).

Tex 1/	Ply	Breaking strength (lbs), minimum	Elongation (%), maximum
24-27	2	1.3	32
35-40	3	2.0	32
50-60	3	3.0	35
70-80	4	4.5	38
90-100	4	5.5	38

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 (see 7.6)
Denier per filament	3.1	ASTM D1577
Direction of twist	3.1	ASTM D204
Tex	Table I	ASTM D204 1/
Ply	Table I	ASTM D 204
Breaking strength (lbs): 2/ Initial (minimum) After aging (minimum)	 Table I 85% of initial breaking strength	 ASTM D204 3.3 and ASTM D204
Elongation (%), (maximum)	Table I	ASTM D204 3/
Colorfastness (minimum): Laundering (after three (3) cycles)	3-4	AATCC 61, 3A 4/, 5/, 6/
Visual shade matching	3.4	3.4.1
Finishes	3.5	Visual
Toxicity	3.6	3.6.1

1/ One (1) determination per sample unit shall be made and the result reported as “pass” or fail”.
2/ Straight strength and elongation of conditioned threads test.
3/ Elongation at sewing forces test.
4/ Two (2) to six (6) grams of the yarn, held together to form a unit for testing. The specimens shall be dried after each laundering cycle.
5/ AATCC Evaluation Procedure 1, Gray Scale for Color Change.
6/ AATCC Evaluation Procedure 2, Gray Scale for Staining – Only the stain on the nylon fiber of the color transfer cloth shall be evaluated for the color transfer evaluation.

3.3 Heat aging test. Five (5) skein specimens (15 yards each), shall be prepared as specified in ASTM D1578 Option 1, using 20 turns. The five skeins shall be exposed for 20 minutes to 550 (±10)ºF using an air circulating 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 II. The heat aging resistance shall be the average of the breaking strength obtained from the specimens tested and shall be reported to the nearest 1.0 percent of the original breaking strength.

3.4 Color. The color shall be as specified in the applicable end item specification or in the contract (see 7.8). 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) 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 t 2856K (± 200).

3.5 Finished materials. The finished thread shall have no chemical finishes or treatments other than those commonly used such as water repellent finishes or lubricants on commercial threads. The thread shall have a soft finished and contain only the minimum amount of lubricant to facilitate sewing. Only non-staining finishes shall be permitted as sewing finishes, or as specified in the contract 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 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 7.8) 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 7.8).

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 size, name of thread manufacturer, and nomenclature specifying 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 or contract (when applicable).

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 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.

5.1.1 Market acceptability criteria. The item offered must have been sold to the government or commercial market.

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 7.8).

6. PACKAGING. Preservation, packing, and marking shall be as specified in the contract or purchase order (see 7.8).

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),is available online at https://www.crepress.com.

7.3 Intended use. The thread is intended for sewing heat and flame resistant uniforms, equipage, 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 Type II- High performance thread. Type II has been deleted due to the unavailability of high performance spun stable meta-aramid thread in the USA. Type II thread is not Berry Amendment compliant.

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

7.7 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.

7.8 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 (2.1, 3.2)
c. Color required (see 3.4)
d. When toxicity testing is required (see 3.7)
e. Put-up required if other than specified (see 3.8)
f. Product conformance provisions (see 5.1)
g. Acceptance criteria provisions (see 5.4)
h. Packaging requirement (see 6.)

7.9 Key words.

Anti-exposure
Drawers
Flyers
Jackets
Sewing
Trousers

MILITARY INTERESTS:

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

Reviewer Activity:
Army - MD
Navy MC, AS

CIVIL AGENCY COORDINATING ACTIVITY:

GSA-FAS

PREPARING ACTIVITY:
DLA –CT

(Project: 8310-2019-002)

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/.