

INCH-POUND

A-A-59991

December 4, 2018

## COMMERCIAL ITEM DESCRIPTION

### THREAD AND TWINE, MILDEW RESISTANT OR WATER REPELLENT TREATED

The General Services Administration has authorized the use of this commercial item description as a replacement for MIL-T-3530H for all federal agencies.

1. SCOPE. This commercial item description covers the requirements for a mildew resistant or water repellent treated thread and twine.

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

#### 2.1 Types.

Type I – Mildew resistant treated thread and twine.

Class 1 - Inorganic, metalized, mildew inhibitor

Class 2 - Organic mildew inhibitor

Type II – Water repellent treated thread

Class 3 - Water repellent treatment (durable type)

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>.

AMSC N/A

FSC 8310

## A-A-59991

### 3. SALIENT CHARACTERISTICS.

3.1 General description. The document governing the untreated thread and twine to be treated under this specification shall be as cited in the applicable acquisition (see 7.7).

3.1.1 Requirements. Thread and twine shall conform to the requirements of the applicable document for the untreated thread and twine prior to and after mildew resistant or water repellent or water repellent treatment except as otherwise indicated herein.

#### 3.2 Type I, Class 1 - Inorganic, metalized, mildew inhibitor.

3.2.1 Class 1, mildew inhibitor. The Class 1 thread and twine intended for direct contact with soil, shall be treated with an EPA approved inorganic metalized, mildew inhibitor. The treated thread and twine shall retain 75 percent breaking strength (see 3.2.2) after leaching and 12 weeks of soil burial when tested in accordance with AATCC Test Method 30, Test I, Appendix A.

3.2.2 Percent breaking strength loss. The percent breaking strength loss after leaching and soil burial shall be calculated as stated in AATCC 30, Test 1 and shall be reported to the nearest one (1) percent (see 3.2.1).

#### 3.3 Type I, Class 2 - Organic mildew inhibitor.

3.3.1 Class 2, mildew inhibitor. The Class 2 thread and twine intended for use that will not come into contact with soil, shall be treated with an EPA approved organic mildew inhibitor. The threaded thread and twine shall be tested in accordance with AATCC Test Method 30, Test III and rated no more than "Microscopic Growth".

#### 3.4 Type II, Class 3 - Water repellent treatment (durable type) (see 7.7).

3.4.1 Class 3, water repellent. The Class 3 thread and twine shall be treated with a durable type water repellent to meet the following requirements.

3.4.1.1 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

## A-A-59991

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.

3.5 pH (all Types and Classes). The pH of the thread and twine shall not be lower than 5.5 or higher than 8.5 when tested in accordance with AATCC Test Method 81.

3.6 Color (all Types and Classes). The thread or twine shall be undyed or dyed as specified (see 7.7). The color shall be as specified in the applicable end item specification or in the contract. The dyed thread and twine shall be a good match to the applicable end item when examined in accordance with 3.6.1. The shade of the polyester core shall approximate that of the cotton or staple polyester covering.

3.6.1 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 ( $\pm 200$ ) illumination of 100 ( $\pm 20$ ) foot candles, and shall be a good match to the standard sample under incandescent A illuminant with a color temperature of 2856K ( $\pm 200$ ).

3.7 Colorfastness. The colorfastness requirements for the dyed thread or twine shall be as specified in the applicable end item document or in the contract (see 7.7).

3.8 Toxicity. The finished thread and twine shall not present a health hazard and shall show compatibility with prolonged, direct skin contact when tested as specified in 3.8.1. Chemicals recognized by the Environmental Protection Agency (EPA) as human carcinogens shall not be used.

3.8.1 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 7.2.3). If the toxicity requirement (see 3.8) can be demonstrated with historical use data, toxicity testing may not be required (see 7.7).

3.9 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

## A-A-59991

information related to length in yards or weight of cone, direction of twist, color, name of thread manufacturer, and nomenclature specifying fiber type and construction.

3.10 Workmanship. The finished thread and twine shall conform to the quality of product established by this document.

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 Market acceptability criteria. The thread and twine offered must have been sold to the government or commercial market.

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

5.4 Visual examination. Thread shall be examined for the defects listed in Table I.

TABLE I. Visual examination defects.

<u>Thread or twine</u> : Spot, stain, soiling, or lint. Objectionable odor. Missing finish, lumps. Uneven thread or twine thickness.
<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.

5.5 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.

## A-A-59991

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

7.1.2 Environmental Protection Agency. Copies are available online at <http://www.epa.gov/pesticides>.

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 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.

7.3.1 Type I, Class 1. Type I, Class 1 thread or twine is intended for use in the fabrication of footwear, tents and equipment subject to considerable ground contact under conditions for actual use.

7.3.2 Type I, Class 2. Type I, Class 2 thread or twine is intended for use where color is of prime importance or in the fabrication of materials such as coated fabrics with natural rubber.

7.3.3 Type II, Class 3. Type II, Class 3 threads are intended for use in end items fabricated from durable water repellent treated fabric which will be subjected to repeated launderings.

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 (if applicable).

7.5 Application of sewing finish to Type II, Class 3 thread. Experience has shown that the sewing finish applied to Type II, Class 3 water repellent treated thread, must be selected carefully to avoid solvents and penetrating agents which would adversely affect the water repellency performance of the treated thread. The requirements specified herein apply to soft or bonded finish thread. Glazing (cotton) and polishing (linen) finishes have been shown to increase substantially the wicking properties of water repellent treated thread.

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.

A-A-59991

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

- a. Title, number, and date of this Commercial Item Description (CID)
- b. Types and Classes required (see 2.1, 3.2, 3.3, 3.4)
- c. Title, number, and date of document governing untreated thread or twine (see 3.1)
- d. Color and colorfastness properties required (see 3.6, 3.6.1, 3.7)
- e. When toxicity testing is required (see 3.8, 3.8.1)
- f. Product conformance provisions (see 5.1, 5.2)
- g. Acceptance criteria provisions (see 5.5)
- h. Packaging requirement (see 6.1)

7.8 Key words.

Equipage  
Footwear  
Inorganic inhibitor  
Organic inhibitor  
Tentage  
Wicking

MILITARY INTERESTS:

Custodian:

Army-GL  
Navy- NU  
Air Force- 11

Reviewer activities:

Army – MD  
Navy – MC, AS

CIVIL AGENCY COORDINATING ACTIVITY:

GSA-FAS

PREPARING ACTIVITY:

DLA – CT

(Project: 8310-2019-003)

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> .