

T-T-911F
January 22, 1974

SUPERSEDING
Fed. Spec. T-T-911E
July 17, 1970

FEDERAL SPECIFICATION

TWINE, FIBROUS, JUTE

This specification was approved by the Commissioner, Federal Supply Service, General Services Administration, for the use of all Federal agencies.

1. SCOPE AND CLASSIFICATION

1.1 Scope. This specification covers the requirements for jute twine (see 6.1).

1.2 Classification.

1.2.1 Types. Twine shall be of the following types and sizes as specified in tables I and II (see 6.2 and 6.4).

| | | |
|---------|---|-----------------|
| Type I | - | Natural finish |
| Type II | - | Polished finish |

2. APPLICABLE DOCUMENTS

2.1 The following documents, of the issue in effect on date of invitation for bids or request for proposal, form a part of this specification to the extent specified herein:

Federal Specifications:

| | | |
|-----------|---|-----------------------------------|
| UU-P-268 | - | Paper, Kraft, Untreated, Wrapping |
| PPP-B-636 | - | Boxes, Shipping, Fiberboard |

Federal Standards:

| | | |
|-------------|---|--|
| FED-STD-123 | - | Marking for Domestic Shipment (Civil Agencies) |
| FED-STD-191 | - | Textile Test Methods |

(Activities outside the Federal Government may obtain copies of Federal Specifications, Standards, and Handbooks as outlined under General Information

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in the Index of Federal Specifications and Standards and at the prices indicated in the Index. The Index, which includes cumulative monthly supplements as issued, is for sale on a subscription basis by the Superintendent of Documents, U.S. Government Printing Office, Washington, DC 20402.

(Single copies of this specification and other Federal specifications required by activities outside the Federal Government for bidding purposes are available without charge from Business Service Centers at the General Services Administration Regional Offices in Boston, New York, Washington, DC, Atlanta, Chicago, Kansas City, MO, Fort Worth, Denver, San Francisco, Los Angeles, and Seattle, WA.

(Federal Government activities may obtain copies of Federal Specifications, Standards, and Handbooks and the Index of Federal Specifications and Standards from established distribution points in their agencies.)

Military Specification:

MIL-C-3131 - Cordage; Preparation for Delivery of

Military Standard:

MIL-STD-105 - Sampling Procedures and Tables for Inspection by Attributes

(Copies of specifications and standards required by suppliers in connection with specific procurement functions should be obtained from the procuring activity or as directed by the contracting officer.)

2.2 Other publications. The following documents form a part of this specification to the extent specified herein. Unless a specific issue is identified, the issue in effect on date of invitation for bids or request for proposal shall apply:

American Society for Testing and Materials Standards

D-541 - Testing and Tolerances for Single Jute Yarns
D-1233 - Testing Twine Made From Bast and Leaf Fibers

(Application for copies should be addressed to the American Society for Testing and Materials, 1916 Race Street, Philadelphia, PA 19103.)

3. REQUIREMENTS

3.1 Government or supplier purchases. The requirements specified in 3.3 apply only to twine purchased directly by the Government. All other requirements apply to twine purchased by a supplier as a component for an end item and to twine purchased directly by the Government.

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3.2 Material.

3.2.1 Jute. The jute twine shall be made of jute (*Corchorus Olitorius* or *Corchorus Copsularis* or both) or kenaf (*Hibiscus Cannabinus*) processed to meet the requirements of this specification.

3.2.2 Color. Unless otherwise specified, the twine shall be furnished in natural color (see 6.2).

3.2.3 Finish.

3.2.3.1 Type I, natural finish. Natural finish shall denote a twine for which no consistency or luster other than that inherent with the jute or kenaf material is required.

3.2.3.2 Type II, polished finish. Polished finish twine shall be lustrous and shall have a smooth dressed surface.

3.2.3.3 Staining. The twine shall be stainless when tested as specified in 4.2.5.

3.2.4 Physical requirements. Type I and type II twine shall conform to the physical requirements specified in tables I and II respectively, for the applicable size when tested as specified in 4.2.5.

TABLE I. Type I - Natural finish twine

| Size no. | Ply <u>1/</u> | Length per pound (minimum feet) | Breaking strength (minimum pounds) |
|----------|---------------|---------------------------------------|--|
| 0 | | 1960 | 17 |
| 1 | | 1450 | 20 |
| 2 | | 950 | 32 |
| 3 | | 800 | 43 |
| 4 | | 640 | 54 |
| 5 | | 535 | 60 |
| 6 | | 275 | 125 |
| 7 | | 160 | 210 |
| 7A | | 130 | 260 |
| 8 | | 103 | 335 |
| 9 | | 75 | 370 |

1/ In no instance shall the twine be less than 2 ply, except for size "0" which shall be single ply.

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TABLE II. Type II - Polished finish twine

| Size no. | Ply <u>1/</u> | Length per pound (minimum feet) | Breaking strength (minimum pounds) |
|----------|---------------|---------------------------------------|--|
| 1 | | 1090 | 25 |
| 2 | | 760 | 40 |
| 3 | | 530 | 55 |
| 4 | | 400 | 75 |
| 5 | | 300 | 100 |
| 6 | | 240 | 125 |
| 6A | | 185 | 155 |
| 7 | | 130 | 215 |
| 8 | | 100 | 270 |
| 9 | | 85 | 350 |

1/ Ply is not standard with manufacturers. In no instance shall the twine be less than 2 ply.

3.3 Put-up. Unless otherwise specified (see 6.2), the twine shall be put-up on a nominal weight per holder basis. The average weight per holder shall be not less than the specified nominal weight minus a 3.0 percent tolerance when tested (on a 10 holder basis) as specified in 4.2.2.

3.3.1 Military agencies. On military procurements the jute twine shall be put up in one-pound balls or tubes (hereinafter referred to as holders) in sizes 1 through 6 and in 5-pound balls or tubes (hereinafter referred to as holders) for sizes 6A, 7, 7A, 8 and 9.

3.3.2 Civil agencies. For civil agency procurements, the jute twine shall be furnished in 1/2-pound balls, 1-pound balls or 10-pound balls (or 10-pound universal wound tubes), or tubes (hereinafter referred to as holders) as specified (see 6.2 and 6.2.1). Unless otherwise specified (see 6.2) size "0" twine shall be furnished on 5-pound cones or tubes.

3.3.3 Winding. Each holder of twine shall be continuous throughout, shall not contain loose ends, shall be so wound that each turn and layer is free from entanglement. Each ball of twine shall unwind from the inside without the ball collapsing. Unless otherwise specified (see 6.2), there shall be no restrictions on the number of twine knots (knots in the finished twine) per holder, except type I, size "0" which shall have no more than one twine knot per 1/2-pound of twine.

3.4 Workmanship. The jute twine shall conform to the quality and grade of the product established by this specification. The occurrence of defects shall not exceed the applicable acceptable quality levels.

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4. QUALITY ASSURANCE PROVISIONS

4.1 Responsibility for inspection. Unless otherwise specified in the contract or purchase order, the supplier is responsible for the performance of all inspection requirements as specified herein. Except as otherwise specified in the contract or order, the supplier may use his own or any other facilities suitable for the performance of the inspection requirements specified herein, unless disapproved by the Government. The Government reserves the right to perform any of the inspections set forth in the specification where such inspections are deemed necessary to assure supplies and services conform to prescribed requirements.

4.1.1 Certificate of compliance (DoD procurements only). Where certificates of compliance are submitted, the Government reserves the right to check test such items to determine the validity of the certification.

4.2 Quality conformance inspection. Sampling for inspection and acceptance shall be in accordance with the provisions set forth in MIL-STD-105, except where otherwise indicated hereinafter.

4.2.1 Examination of the end item for visual defects. Defects found during this examination shall be classified in accordance with the defects listed in table III regardless of their proximity to each other. The sample unit for this examination shall be one holder of twine. Ten percent of the length contained in each sample unit, but not less than 100 feet shall be subjected to the visual examination. Should the footage contained in a sample unit not be sufficient to perform this examination; additional holders shall be taken to make up the shortage. The lot size for this examination shall be expressed in units of holders each. The acceptable quality levels shall be 1.5 major defects and 6.5 total defects (major and minor combined) per 100 units. The inspection level shall be level I.

TABLE III. Visual examination

| Examine | Defect | Classification | |
|----------------------------|---|----------------|-------|
| | | Major | Minor |
| Appearance and workmanship | Cut, any | X | |
| | Chafed or damaged | X | |
| | Finish other than specified | X | |
| | Broken or loose end | X | |
| Cleanness | Spot or stain, visible <u>1/</u> | | X |
| | Lumps, picker, or similar dirty waste and linters visible <u>1/</u> | | X |
| Color | Other than natural (unless otherwise specified) | X | |
| Type | Other than specified | X | |

1/ At normal inspection distance (approximately 3 feet).

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4.2.2 Examination for net weight per holder. The sample unit for this examination shall be 10 wound holders taken at random from the lot under test. The sample size shall be one sample unit regardless of lot size. The holders shall be weighed individually, and the net weight of the twine determined. The values obtained shall be averaged and this average shall represent the net weight per holder in the lot. The lot shall be unacceptable if the average net weight per holder is less than the specified weight minus the 3.0 percent tolerance (see 3.3).

4.2.3 Examination for winding. The sample unit for this examination shall be one holder. The inspection level shall be S-3 and the acceptable quality level shall be 4.0 percent defective. For lots consisting of 500 or fewer units, the sample size (number of sample units) shall be 10, and the acceptance number 1. The lot size shall be the number of holders in the inspection lot. Defects with regard to winding shall be considered to exist if any of the following are determined during inspection:

(a) Improperly or not firmly wound resulting in kinks, knotting, entangling, or slippage during unwinding or otherwise affecting free unhampered unwinding of twine.

(b) Not in a continuous length.

(c) Number of twine knots more than the maximum acceptable number specified (when required).

(d) Put-up not as specified.

4.2.4 Examination of preparation for delivery requirements. An examination shall be made to determine that packaging, packing and marking complies with section 5 requirements of this specification. The examination shall be in accordance with the provisions of MIL-C-3131, except that the inspection level shall be S-2 and the AQL shall be 2.5 defects per 100 units.

4.2.5 Testing of the end item. The methods of testing specified in FED-STD-191, wherever applicable and as listed in table V shall be followed. When the data in the "Number of determinations" and "Results reported as" columns are not specified in the table, they shall be as required by the referenced test method. The physical and chemical values specified in section 3 apply to the average of the determination made on a sample unit for test purposes as specified in the applicable test methods. The sample size shall be in accordance with table IV. The sample unit for testing shall be one holder of twine. The lot size shall be expressed in units of one holder each. All test reports shall contain the individual values utilized in expressing the final result. The lot shall be unacceptable if one or more units fail to meet any requirement. Tests to determine compliance with specification requirements including quantity of delivery may be made under prevailing atmospheric conditions; except in settlement of dispute in which case the test shall be made upon material which has reached equilibrium under standard conditions as defined in section 4 of FED-STD-191.

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TABLE IV. Sampling for tests

| Lot size (holders) | Sample sizes |
|--------------------------------|--------------|
| 800 or less | 2 |
| 801 up to and including 22,000 | 3 |
| 22,001 and over | 5 |

TABLE V. Test methods

| Characteristic | Requirement paragraph | Test method | Number of determinations per individual sample unit | Results reported as |
|-------------------------|-----------------------|----------------|---|--|
| Material identification | 3.2.1 | 1260 <u>1/</u> | | |
| Finish | 3.2.3 | Visual | 1 | Pass or fail |
| Staining | 3.2.3.3 | 4.2.5.1 | 1 | Pass or fail |
| Length per pound | 3.2.4 | 6004 <u>2/</u> | 2 | Avg. of 2 deter. reported to nearest 0.1 ft. |
| Breaking strength | 3.2.4 | 4102 <u>2/</u> | 5 | Avg. of 5 deter. reported to nearest 0.5 lb. |
| Ply | Tables I and II | Visual | 1 | Pass or fail |

1/ Unless otherwise specified, a certificate of compliance shall be furnished and will be accepted for the stated requirement. The certificate shall be accompanied by actual test inspection or other verifiable data.

2/ As an alternate, suppliers may select to test in accordance with all the provisions specified in ASTM Method D-541 for size "0" twine and ASTM Method D-1233 for sizes 1 through 9 twines. In cases of dispute; testing shall be conducted as specified in the applicable ASTM test methods (D-541 and D-1233).

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4.2.5.1 Staining. The jute twine shall be considered nonstaining when a sample, laid between sheets of white unglazed paper, does not stain the paper under a pressure of 10 pounds per square foot applied for 12 hours.

5. PREPARATION FOR DELIVERY

5.1 Packaging. Packaging shall be level A, B or C as specified (see 6.2).

5.1.1 Level A. Twine shall be packaged in accordance with the applicable requirements of MIL-C-3131.

5.1.2 Level B. Each 10-pound ball or wound tube of twine shall be wrapped in a sheet of 30-pound minimum basis weight kraft paper conforming to grade B of UU-P-268. The wrap shall be secured with tape. Alternatively, each ball or wound tube of twine shall be inserted in a snug fitting flat or square style clear polyethylene film bag of 0.0015 inch thickness (+ 20 percent tolerance). The bag shall be closed and secured with gummed paper or pressure sensitive tape.

5.1.3 Level C. Twine shall be packaged to afford adequate protection against physical damage during shipment from the supply source to the first receiving activity. The supplier may use his standard practice when it meets this requirement.

5.2 Packing. Packing shall be level A, B or C as specified (see 6.2).

5.2.1 Levels A and C. Twine shall be packed in quantities specified in the contract or order in accordance with the applicable requirements of MIL-C-3131.

5.2.2 Level B. One hundred and twenty (120) one-half pound balls, sixty (60) one-pound balls, or six (6) ten-pound balls, tubes or cones, or twelve (12) five-pound cones or tubes of one type and size, shall be packed in close-fitting fiberboard box conforming to PPP-B-636, class domestic, style CSSC, FOL, or SFF. The fiberboard shall meet the special requirements of table I of PPP-B-636.

5.3 Marking.

5.3.1 Civil agencies. In addition to any special marking required by the contract or order, interior packages and shipping containers shall be marked in accordance with FED-STD-123. Shelf life markings shall be included under special markings.

5.3.2 Military requirements. In addition to any special marking required by the contract or order, interior packages and shipping containers shall be marked in accordance with MIL-C-3131.

5.3.3 Polyethylene bagged packages. Polyethylene bagged packages shall have the required identification information legibly printed or stamped in

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black directly on the bag across the center face or on a white paper label inserted within the bag so as to permit ready identification.

6. NOTES

6.1 Intended use. The twine covered by this specification is for wrapping purposes.

6.2 Ordering data. Purchasers should exercise any desired options offered herein and procurement documents should specify the following:

- (a) Title, number and date of this specification.
- (b) Type of twine required (see 1.2).
- (c) Size required (see tables I and II).
- (d) Color of twine, if other than specified (see 3.2.2).
- (e) Put-up (see 3.3).
- (f) Selection of the applicable levels of packaging and packing (see 5.1 and 5.2).
- (g) When required, the maximum acceptable number of twine knots (see 3.3.3).

6.2.1 Department of Defense procurements. As a result of Department of Defense Standardization agreements all DoD direct procurements shall be on the basis of 1 or 5 pound balls or tubes.

6.3 The standard pack requirements in 5.2.2 are intended for use in procurement of stores stock replenishments. Procuring officers should use the standard pack requirements when it is known that the material will be shipped from a supplier to a domestic warehouse, supply depot or intermediate storage point for temporary storage, subsequent to issue for shipment to eventual user.

6.4 Supersession data. The physical requirements specified in T-T-911a have no direct counterpart to this specification or to the original T-T-911. To clarify reference documents which specify jute twine requirements which are based on T-T-911, the following transition table has been prepared. The requirements for types A, B, C, and D twine of T-T-911 are now covered by types I and II of T-T-911E and T-T-911F. A comparison of types and sizes of T-T-911, T-T-911d, T-T-911E and T-T-911F is listed below:

| <u>T-T-911F</u> and <u>T-T-911E</u> | <u>T-T-911d</u> | <u>T-T-911</u> |
|---|-----------------|----------------|
| Type I | Type I | |
| Size 0 | | |
| Size 1 | Size 1 | Type B, 2 ply |
| Size 2 | Size 2 | Type B, 3 ply |

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and

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| | | |
|---------|---------|----------------|
| Size 3 | Size 3 | Type B, 4 ply |
| Size 4 | Size 4 | Type B, 5 ply |
| Size 5 | Size 5 | Type B, 6 ply |
| Size 6 | Size 6 | Type C, 3 ply |
| Size 7 | Size 7 | Type C, 5 ply |
| Size 7A | Size 7A | Type C, 6 ply |
| Size 8 | Size 8 | Type C, 8 ply |
| Size 9 | Size 9 | Type C, 10 ply |

Type II

Type II

| | | |
|---------|---------|----------------|
| Size 1 | Size 1 | Type A, No. 12 |
| Size 2 | Size 2 | Type A, No. 18 |
| Size 3 | Size 3 | Type A, No. 24 |
| Size 4 | Size 4 | Type A, No. 36 |
| Size 5 | Size 5 | Type A, No. 48 |
| Size 6 | Size 6 | Type A, No. 60 |
| Size 6A | Size 6A | Type D, No. 6 |
| Size 7 | Size 7 | Type D, No. 7 |
| Size 8 | Size 8 | Type D, No. 8 |
| Size 9 | Size 9 | Type D, No. 9 |

6.5 Adjusted net weight. When an adjustment of the involved weight of type I, size "0" twine is required by the procurment office the following procedure should apply: At the time of sampling type I, size "0" natural finish twine, randomly take sample balls or tubes (hereinafter referred to as holders) from different containers of the shipment in the proportion of 1 holder for each 2400 holders (50 holders minimum per shipment). The holders shall be weighed immediately after being taken from the containers. These holders shall then be reeled into skeins and brought to moisture equilibrium under Standard Conditions for testing, in accordance with section 4 of FED-STD-191. The difference between the weight of the holders immediately upon removal from the container and their weight after reaching equilibrium under standard atmospheric conditions shall be the basis for determining the invoiced weight. The difference shall be expressed as a percentage of the weight of the holders at the time of sampling. The net weight of the shipment at the time of sampling shall be decreased by this percentage when the conditioned sample weight is less than the weight of the sample as taken from the cartons, and shall be increased when the conditioned sample weight is greater than the weight of the sample taken from the cartons.

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6.5.1 It is recommended to the procurement office that the adjusted weight of the samples, after reaching equilibrium under Standard Conditions, be added to the total adjusted weight of the shipment in determining the invoice weight. This is to compensate for the cost of sample balls that were replaced in the shipment by the contractor. For all practical purposes it is suggested that sample twine be salvaged if considered usable by the Government.

Custodians:

Army - GL
Air Force - 82

Review activities:

Army - MD, ME
DSA-IS

User activities:

Navy - MC, SH

Preparing activity:

Army - GL

Civil Agency Interest:

AGR-OPO
GSA-FSS
HEW-HSM
INT-BLM
POD-POS

Project No. 4020-0240

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DOCUMENT IDENTIFIER AND TITLE

T-T-911F TWINE, FIBROUS, JUTE

NAME OF ORGANIZATION AND ADDRESS**CONTRACT NUMBER****MATERIAL PROCURED UNDER A** DIRECT GOVERNMENT CONTRACT SUBCONTRACT**1. HAS ANY PART OF THE DOCUMENT CREATED PROBLEMS OR REQUIRED INTERPRETATION IN PROCUREMENT USE?**

A. GIVE PARAGRAPH NUMBER AND WORDING.

B. RECOMMENDATIONS FOR CORRECTING THE DEFICIENCIES

2. COMMENTS ON ANY DOCUMENT REQUIREMENT CONSIDERED TOO RIGID**3. IS THE DOCUMENT RESTRICTIVE?** YES NO (If "Yes", in what way?)**4. REMARKS**

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