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INCH-POUND

A-A-55093  
15 November 1992

## COMMERCIAL ITEM DESCRIPTION

### LACES, FOOTWEAR

The General Services Administration has authorized the use of this Commercial Item Description in preference to Federal specification V-L-61.

Abstract This Commercial Item Description covers technical requirements for various nylon laces intended for use in footwear and equipage items utilized by Department of Defense, and other government agencies.

Classification. The laces shall be provided in the following types and classes:

- Type I - Spun Nylon Laces
  - Class 1 - 7/32 inch width, flat
  - Class 2 - 10/32 inch width, flat
  - Class 3 - 9/32 inch flat
- Type II - Bulkied filament nylon laces
  - Class 1 - 3/32 inch diameter, round (210 denier yarn)

Beneficial comments (recommendations, additions, deletions) and any pertinent data which may be of use in improving this document should be addressed to: Defense Personnel Support Center, Clothing and Textiles Directorate, Attn: DPSC-FSSD, 2800 South 20th Street, Philadelphia, PA 19101-8419, by using the Standardization Document Improvement Proposal (DD Form 1426) appearing at the end of this document or by letter.

AMSC N/A

FSC 8335

DISTRIBUTION STATEMENT A.

Approved for public release;  
distribution is unlimited.

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Class 2 - 8/32 inch width, flat  
 Class 3 - 4/32 inch diameter, round  
 Class 4 - 3/32 inch diameter, round (420 denier yarn)

Type III - Multifilament nylon laces  
 Class 1 - 4/32 inch each side, square

NOTE: Color shall be specified in the solicitation except that the stuffer yarns for Type II, Class 3 need not be dyed.

Material.

The nylon yarn for braiding type I, classes 1, 2, and 3 laces shall be spun from nylon staple and twisted into 2-ply yarn. The nylon yarn for braiding type II, classes 1 and 2 laces, shall be a 210 denier continuous multifilament yarn which has been increased in size to 230-250 denier by air bulking. The cover yarns and warp yarns for braiding type II, class 3 laces shall be made from 840 denier high tenacity continuous multifilament nylon yarn which has been increased to 940-1000 denier by the air bulking process; and the stuffer shall be one end of 10,080 denier high tenacity continuous multifilament nylon yarn, which is not air bulked. The stuffer shall not be braided. The type II, class 4 laces shall be made from 420 denier continuous filament nylon yarn which has been increased in size to 470-490 denier by air bulking. The type III, class 1 laces shall be made from 1050 denier by 3 cabled yarns manufactured from high tenacity, continuous multifilament nylon yarns. Each of the individual yarns used for type III, class 1 laces shall be twisted initially with not less than 7.0 nor more than 9.0 turns per inch (TPI) and the final plied twist shall be in the opposite direction with not less than 13.0 nor more than 15.0 turns per inch.

Both ends of each lace shall be provided with tips 3/4  $\pm$  1/16 inch long. Types I and II tips shall be made from nylon or acetate sheet or film having a thickness of 0.013 to 0.016 inch. As an alternative, the ends of types I and II laces shall be self-tipped by an ultrasonic or heat molding process. The ends of type III laces shall be self-tipped by an ultrasonic or heat molding process. The lace tips shall have sufficient rigidity to perform their intended function. The color of the tip material shall be black or clear for black laces, and clear for all other laces.

The braid for the laces shall be tubular braided without a core except for type II, class 3 which has a stuffer core. All laces shall use a two over and two under braiding except type II, class 2, which shall braid one pair over and one pair under or one end over and one end under and type III, class 1, which shall be square. The braid machine used for type III, class 1 shall be set such as to produce a resultant square braid exhibiting four separate sides with an equal number of picks per inch and an equal width per side of 4/32  $\pm$  1/32 inch. The braid shall be

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pressed flat for type I, classes 1, 2, and 3, and for type II class 2 laces in accordance with commercial practice. The braid for type II, classes 1, 3, and 4 laces shall be round and shall not be pressed. The braid for type III, class 1 laces shall be square and shall not be pressed. The braid for the laces shall conform to the physical requirements in table I:

TABLE I. Physical Requirements

| Type | Class | Width<br>Tolerance<br>( $\pm 1/32$ in.) | Carriers<br>min | Ends per<br>Carrier<br>min | Warp<br>ends<br>min | Stuffer<br>min | Pick<br>per<br>inch<br>min | Breaking<br>strength<br>(pounds)<br>min |
|------|-------|-----------------------------------------|-----------------|----------------------------|---------------------|----------------|----------------------------|-----------------------------------------|
| I    | 1     | 7/32                                    | 44              | 1                          | -                   | -              | 38                         | 95                                      |
| I    | 2     | 10/32                                   | 44              | 2                          | -                   | -              | 26                         | 175                                     |
| I    | 3     | 9/32                                    | 44              | 2                          | -                   | -              | 21                         | 185                                     |
| II   | 1     | 3/32<br>(diam.)                         | 16              | 1                          | -                   | -              | 28                         | 100                                     |
| II   | 2     | 8/32                                    | 44 1/           | 1 or<br>2 2/               | -                   | -              | 17                         | 190                                     |
| II   | 3     | 4/32<br>(diam.)                         | 8               | 2                          | 4                   | 1              | 16                         | 180                                     |
| II   | 4     | 3/32<br>(diam.)                         | 16              | 2                          | -                   | -              | 24                         | 135                                     |
| III  | 1     | 4/32<br>(each side)                     | 8               | 1                          | -                   | -              | 14                         | 250                                     |

1/ Carriers braiding in pairs or braiding as a basket weave.

2/ Only one end per carrier required when braiding one end over and one end under.

Length including tips shall also be specified in the solicitation. Laces under 40 inches shall have a length tolerance of plus 5 percent, and laces 40 inches and longer shall have a length tolerance of plus 3 percent.

Workmanship. After completion, the finished laces shall be thoroughly cleaned, and all loose thread, lint, and foreign matter removed.

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Product Demonstration Model. When required, offerers shall submit samples of their intended production. The Product Demonstration Model will consist of units independently developed. Product Demonstration Models will be analyzed and evaluated by the government. Evaluation criteria and basis for award are contained in the solicitation. Product Demonstration Models will be retained by the government. One (1) Product Demonstration Model approved by DPSC under the resultant contract will serve as a manufacturing standard for the corresponding production items delivered under this contract. Offerers are advised that the Product Demonstration Model does not relieve the successful offerer of his responsibility to perform in accordance with the Commercial Item Description specified above.

### Quality Assurance

Certification. The contractor shall certify that the product offered meets the salient characteristics of this description and that the product conforms to the producer's own drawings, specifications, standards and quality assurance practices. The government reserves the right to require proof of such conformance prior to the first delivery and thereafter as may be otherwise provided for, under the provisions of the contract.

Examination. Lots of nylon laces shall be inspected in accordance with "Sampling Procedures and Tables for Inspection by Attributes", ANSI/ASQC Z1.4, published by the American Society for Quality Control.

Visual Examination. The inspection level for visual examination shall be I and the AQL 2.5. The sample unit is one lace.

Dimensional Examination. The finished laces shall conform to the dimensions specified in the solicitation. Any dimension that is not within the established tolerance shall be classified as a defect. The sample unit shall be one lace; the inspection level shall be I and the AQL shall be 2.5.

Packaging Examination. The fully packaged shipping containers shall be examined in accordance with defects listed below. The lot size shall be the number of shipping containers in the inspection lot. The inspection level shall be S-2 and AQL shall be 1.5.

| EXAMINE                            | DEFECT                                                                                    |
|------------------------------------|-------------------------------------------------------------------------------------------|
| Marking<br>(exterior and interior) | Omitted; incorrect; illegible;<br>of improper size, location, or<br>method of application |

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| EXAMINE       | DEFECTS                                                                                                                                           |
|---------------|---------------------------------------------------------------------------------------------------------------------------------------------------|
| Materials     | Any component missing, damaged, or not as specified                                                                                               |
| Workmanship   | Inadequate application of components, such as:<br>incomplete closure of container flaps, loose strapping, improper taping, or inadequate stapling |
| Content       | Number of items in container is more or less than required<br><br>NSN shown on one or more items not as specified on shipping container           |
| Palletization | Length, width, or height exceeds specified maximum requirements<br><br>Pallet type not as specified<br><br>Load not bonded as specified           |

Defects. The laces shall be examined for the following defects:

Laces: yarn - any broken, frayed yarns, or yarns exhibiting rubs or abrasion marks; any hole, cut, or tear; braiding: any uneven braiding, or resultant open places or breaks in continuity, any pulled yarns or uneven tension resulting in uneven width; other than tubular braided with core, when applicable; flat lace, when applicable, not flat for a distance of 2 inches or more; round lace, when applicable, not round for a distance of 2 inches or more; number of yarns or type of braiding not in compliance with Table I; any slub, knot, or abruptly thickened place affecting utility; color other than specified; offshade; any spot, stain, or other discoloration affecting appearance; objectionable odor; any dimension not as specified.

Tipping: any tip missing, damaged, malformed, or insecurely attached; inadequate heat molding (when applicable), e.g. burned, brittle, incomplete, sharp edges; tipping of braid not neatly accomplished; color of tips not black or clear for black laces or not clear for other than black laces; end of tip projects beyond the braid more than 1/16 inch (for attached tips only) end of braid projects beyond the tip end more than 1/16 inch (for attached tips only); thickness, width, or diameter of tip greater than thickness, width, or diameter of braid; any dimension not as

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specified.

End Item Performance Testing. The end item shall be tested for the characteristics listed in Table II. The lot size shall be expressed in units of laces. The sample unit shall be 20 laces.

TABLE II. End Item Tests

| Characteristic         | Requirement paragraph                                                                                                   | Test Method          |
|------------------------|-------------------------------------------------------------------------------------------------------------------------|----------------------|
| Colorfastness to water | Fastness equal to or better than the Standard Sample or a rating equal to or better than good when tested as specified. | AATCC 61-1986        |
| Breaking Strength      | Table I                                                                                                                 | ASTM 1/<br>D 5034-90 |

1/ The distance between the center of the clamps (drum type) at the start of the test shall be 6 inches + 1/16 inch. When the lace length is less than 24 inches, a flat-type jaw shall be used in lieu of a drum-type jaw.

Regulatory Requirements. The offeror/contractor is encouraged to use recovered materials in accordance with Public Law 94-580 to the maximum extent practicable.

Preservation, Packing, and Marking. The preservation, packing, and marking shall be as specified in the contract or order.

Source of Government Documents. Copies of Military and Federal documents are available from:

Standardization Documents Order Desk  
Bldg. 4D  
700 Robbins Avenue  
Philadelphia, PA 19111-5094

Sources of Nongovernment Documents.

ANSI/ASQC Z1.4 - Sampling Procedures and Tables For Inspection By Attributes

(Applications for copies should be addressed to American National Standards Institute, 1430 Broadway, New York, NY 10018-3308.)

ASTM-D 3951 - Standard Practice for Commercial Packaging

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

Technical Manual of the American Association of Textile Chemists and Colorists (AATCC)

(Applications for copies should be addressed to the AATCC National Headquarters, P.O. Box 12215, Research Triangle Park, NC 27709-2215.)

Custodian:

Army - GL  
Navy - NU  
Air Force - 99

Civil Agency Coordinating Activity  
GSA

Review Activities:

Army - MD  
Air Force - 82  
Air Force - 45

Preparing Activity  
DLA - CT

User Activities:

Navy - MC

Project Number 8335-0173



# STANDARDIZATION DOCUMENT IMPROVEMENT PROPOSAL

## INSTRUCTIONS

1. The preparing activity must complete blocks 1, 2, 3, and 8. In block 1, both the document number and revision letter should be given.
2. The submitter of this form must complete blocks 4, 5, 6, and 7.
3. The preparing activity must provide a reply within 30 days from receipt of the form.

NOTE: This form may not be used to request copies of documents, nor to request waivers, or clarification of requirements on current contracts. Comments submitted on this form do not constitute or imply authorization to waive any portion of the referenced document(s) or to amend contractual requirements.

|                                                                                                                                  |  |                                                                                                                                                                                                                         |                                                      |
|----------------------------------------------------------------------------------------------------------------------------------|--|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------|
| <b>1. RECOMMEND A CHANGE:</b>                                                                                                    |  | <b>1. DOCUMENT NUMBER</b><br>A-A-55093                                                                                                                                                                                  | <b>2. DOCUMENT DATE (YYMMDD)</b><br>15 November 1992 |
| <b>3. DOCUMENT TITLE</b><br>Laces, Footwear                                                                                      |  |                                                                                                                                                                                                                         |                                                      |
| <b>4. NATURE OF CHANGE</b> (Identify paragraph number and include proposed rewrite, if possible. Attach extra sheets as needed.) |  |                                                                                                                                                                                                                         |                                                      |
| <b>5. REASON FOR RECOMMENDATION</b>                                                                                              |  |                                                                                                                                                                                                                         |                                                      |
| <b>6. SUBMITTER</b>                                                                                                              |  |                                                                                                                                                                                                                         |                                                      |
| <b>a. NAME (Last, First, Middle Initial)</b>                                                                                     |  | <b>b. ORGANIZATION</b>                                                                                                                                                                                                  |                                                      |
| <b>c. ADDRESS (Include Zip Code)</b>                                                                                             |  | <b>d. TELEPHONE (Include Area Code)</b><br>(1) Commercial<br>(2) AUTOVON (If applicable)                                                                                                                                | <b>7. DATE SUBMITTED (YYMMDD)</b>                    |
| <b>8. PREPARING ACTIVITY</b>                                                                                                     |  |                                                                                                                                                                                                                         |                                                      |
| <b>a. NAME</b><br>Defense Personnel Support Center<br>ATTN: DPSC-FSSD (12-3-D)                                                   |  | <b>b. TELEPHONE (Include Area Code)</b><br>(1) Commercial<br>215-737-8105                                                                                                                                               | <b>(2) AUTOVON</b><br>444-8105                       |
| <b>c. ADDRESS (Include Zip Code)</b><br>2800 South 20th Street<br>P.O. Box 8419<br>Philadelphia, PA 19101-8419                   |  | <b>IF YOU DO NOT RECEIVE A REPLY WITHIN 45 DAYS, CONTACT:</b><br>Defense Quality and Standardization Office<br>5203 Leesburg Pike, Suite 1403, Falls Church, VA 22041-3466<br>Telephone (703) 756-7340 AUTOVON 289-7340 |                                                      |