INCH-POUND
A-A-50371B
28 July 2001
SUPERSEDING
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March 4, 1994

COMMERCIAL ITEM DESCRIPTION

BOOTS, FIREMEN'S

The General Services Administration has authorized the use of this commercial item description for all Federal agencies.

1. SCOPE. This commercial item description covers the requirements for firemen's boots. Type I boots are intended to be worn by damage control personnel in shipboard environments, and the Type II boots are intended to be worn with the damage control fire fighter's coverall and the combination structural/proximity coat and trousers.

2. CLASSIFICATION. The boots shall be available in the following types and whole sizes:

Types

Type I - Three quarter length
Type II - Knee length

Schedule of sizes

5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15

Beneficial comments (recommendations, additions, deletions) and any pertinent data which may be of use in improving this document should be sent to: Defense Supply Center Philadelphia, Clothing and Textiles Directorate, Attn: DSCP-CRFD, Bldg. 6D, 700 Robbins Avenue, Philadelphia, PA 19111-5096.

AMSC N/A FSC 8430

3. SALIENT CHARACTERISTICS.

3.1 Description. The firemen's boots shall have a three-quarter length and a knee (bunker) length standard vulcanized construction. The boots shall have a steel box toe, spike-resistant insole, calendered or molded slip resistant lug outsole and heel, and a shin reinforcement. The Type I boots shall be fitted with a horizontal top strap and buckle assembly, and the Type II boots shall have pull-on leg loops (see (Figure 1). The boots shall meet the requirements of "National Fire Protection Association (NFPA) 1971 Standard Protective Ensemble for Structural Fire Fighting 1997 Edition", except for paragraph 1-3 - Definitions, 3-4.1.6 – Product Label Requirements, and 4-4.8, Protective Footwear Sizing shall not apply for the Type I boot.

3.2 Materials

3.2.1 Upper compounds. The rubber compounds used on the boots shall be natural, synthetic, or a blend of both. The upper part of the boot shall be black with white or yellow bumper toe caps and foxing. The tensile strength of the upper compounds shall be not less than 1100 pounds per square inch (psi) as specified in American Society for Testing and Materials (ASTM) Method D-412. The ultimate elongation of the upper compounds shall be not less than 350 percent when tested as specified in ASTM-D-412. After aging, the tensile strength and ultimate elongation shall each be not less than 75 percent of the original minimum required.

3.2.1.1 Aging. The test specimen shall be aged in accordance with ASTM-D-412 for 16 hours at 212 degrees F (± 2 degrees F).

3.2.2 Sole and heel compounds. The abrasive index of the sole and heel shall be not less than 45 before aging as specified in ASTM-D-1630. After aging the abrasive index shall be not less than 75 percent of the original minimum required. The hardness of the sole and heel compounds shall be 64 (± 5) before aging as specified in ASTM-D-2240. After aging the hardness shall be not more than 75 percent of the original minimum required.

3.2.3 Linings

3.2.3.1 Leg and top lining material. The leg and top linings shall consist of a para-aramid/aramid blend containing 35 to 50 percent para-aramid. The remaining percentage shall be aramid with the following characteristics:

Weight (minimum)	5.5 oz./sq. yd.
Warp (gauge, minimum)	11 per inch
Weft (stitches, minimum)	14 per inch

3.2.3.2 Alternate leg and top lining material. The alternate lining material for the leg and top shall be a blend of 35 to 50 percent para-aramid with the remaining percentage aramid.

The fabric shall be stitched-bonded fleece with the following characteristics:

Weight (minimum)	4.5 o z./sq. yd.
Warp (gauge, minimum)	18 per inch
Weft (stitches, minimum)	16 inch

3.3 Metal parts

3.3.1 Steel box toe. The steel box toe for the Type I boot only shall conform to the toe of the last and shall be fabricated from cold-rolled carbon steel. After heat treatment, as specified and tested in accordance with American National Standards Institute (ANSI) Z41, the steel box toe shall conform to the requirements in Table I.

TABLE I. Physical requirements - Steel box toe

Characteristic	Requirement	Test method
Hardness (Rockwell C)	42 - 52	ASTM-E-18
Carbon content	0.50 to 0.82	ASTM-E-18
Thickness (inch)	0.058 + (.0025)	ASTM-E-18

3.3.2 Buckle. The Type I boot buckle shall be made of aluminum, brass, bronze, or steel. The buckle shall have two strap slots approximately 3/4 inch wide and a lever eye or stay slot approximately 9/16 inch wide.

3.3.3 Rivets/caps and washers/eyelets. When used, rivets and caps or washers and eyelets shall be made of brass, bronze, or steel and shall be of a size suitable for the purpose intended.

3.3.4 Shanks. Steel shanks shall be used.

3.4 Shin reinforcement. The shin reinforcement shall be either an inner shin guard made of a minimum .100 hardened rag or an exterior shin protector made of heavy knurled rubber.

3.5 Leakage test for finished boot. Boots shall be tested for leakage by inserting a hose or pipe into the boot and applying an air pressure of 1 $\pm$ 0.1 psi. The top of the boot shall be closed in a manner to prevent the escape of air and the boot shall be immersed in a tank of water so that the top of the boot is approximately 3 inches above the water level. Evidence of leakage shall be indicated by bubbles of air that form below the water level and rise to the surface of the water.

3.6 Construction. The boots shall be constructed in accordance with the contractor's patterns and lasts. All overlapped parts shall be firmly rolled or pressed before vulcanization.

3.7 Height measurements. The inside height of the Type I boots shall be not less than 29 inches. The inside height of the Type II boots (excluding leg loops) shall be not less than 13 inches. The height, using a finished boot, shall be measured at the inside heel area to the top, back of the boot.

3.8 Marking and labeling

3.8.1 Size marking. The size of each boot shall be embossed or branded into the breast of the heel or into the outsole in the shank area close to the heel breast. Marking shall be not less than 1/2 inch in height.

3.8.2 Contractual marking. The contractual marking shall be either legibly stamped or printed with indelible ink (of a contrasting color) on the inside of the boot approximately one inch below the top edge, with letters a minimum of 1/2 inch in height, and shall contain the following information:

US
SIZE
BOOTS, FIREMEN'S
CONTRACT NUMBER: SP0-100-00-0-0000 (Example)
NAME OF CONTRACTOR:
STOCK NO.: 8340-00-000-0000
UPC CODE

As an alternate on the Type II boot, the contractual marking may be located on the outside of the boot just below the inside leg loop.

3.8.3 Labels and other identification. The type II boot shall have a NFPA label stating it conforms to the requirements stated in the General description paragraph. The Type I boot shall have a commercial label to indicate item nomenclature, maintenance and cleaning information. The contractor's label or trademark, and other identifying markings such as leg bands may be used. However, the height of the label shall be not more than 1-1/2 inches in height or width, and not more than one label per boot shall be used.

3.8.4 Bar code label. Each pair of boots shall be individually bar-coded. The bar-coding element shall be a 13 digit National Stock Number (NSN), and there shall be a 12 digit UPC symbol for each NSN. The " UPC" must appear beneath the NSN. The bar-code for NSN type shall be a medium to high code density and shall be located so that it is completely visible when packaged, and causes no damage to the item. This UPC code must also be placed on all shipping cartons on which the NSN appears.

4. REGULATORY REQUIREMENTS.

4.1 Recycled recovered materials. The offeror/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. QUALITY ASSURANCE PROVISIONS.

5.1 Product conformance. The products offered 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 a similar product that is offered for sale in the commercial market. The Government reserves the right to require proof of such conformance.

5.2 Market acceptance criteria. The item offered, or a generic equivalent, must have been sold to the commercial market or to the Government.

5.3. Defects. The product shall be examined for pairing; color not as specified; wrong style; any missing components; workmanship defects which would effect serviceability, distortion of product; wrinkles, pleats or excess fullness in the linings; any hole, cut, tear, spot, or stain; any leakage; label missing; required markings missing, incorrect, or illegible; measurements (when required) not as specified; bar code or upc number omitted or not readable by scanner; human-readable interpretation (HRI) omitted or illegible; bar code or upc number not visible on packaged item; bar code causes damage to the item; any items 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.

6. PACKAGING.

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

7. NOTES.

7.1 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

7.2 Source of non-Government documents

ASTM Test Methods

D 412	Vulcanized Rubber and Thermoplastic Elastomers-Tension
D 1630	Rubber Property -Abraision Resistance (NBS Abraded)
D 2240	Rubber Property - Durometer Hardness
E 18	Rockwell Hardness and Rockwell Superficial Hardness of Metallic Materials

(Applications for copies should be addressed to American Society for Testing and Materials (ASTM), 100 Barr Harbor Drive, West Conshohocken, PA 19428-2959.)

ANSI Z41 - Footwear Selection and User Guide for Protective Footwear

(Applications for copies should be addressed to National Safety Council, 444 North Michigan Avenue, Chicago, IL 60611.)

NFPA 1971 – Standard on Protective Ensemble for Structural Fire Fighting 1997 edition.

(Applications for copies should be addressed to the National Fire Protection Association, Batterymarch Park, Quincy, MA 02269-9101.)

7.3 Additional sizes. The approved suppliers may also commercially supply boots in additional sizes to those listed in this document.

7.4 Boot styles. The following products are known to meet the characteristics of this commercial item description:

LaCrosse Footwear, Inc. LaCrosse, WI 54602
Norcross Safety Products, Rock Island, IL 61204

MILITARY INTERESTS:

Custodians:
Navy - NU
Army - GL

Review Activities:
Army - MD

CIVIL AGENCY COORDINATING ACTIVITY:
GSA - FSS

PREPARING ACTIVITY:
DLA - CT

Project 8430-0431

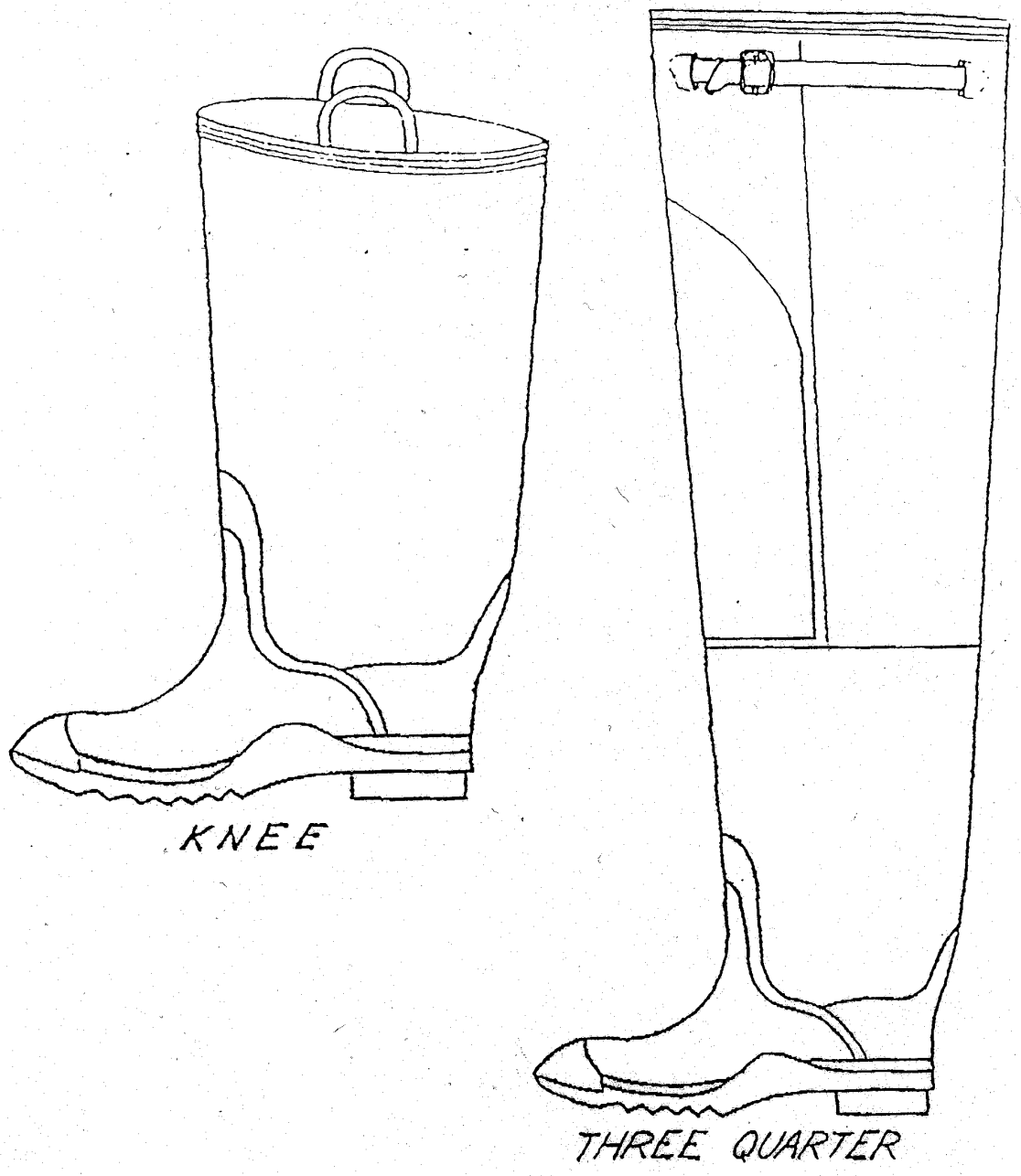

FIGURE 1. BOOTS, FIREMEN'S