

DESCRIPTION FOR PURCHASE

TOOL KIT, LINEMAN'S SAFETY

1. Scope. This Description for Purchase (DFP) describes a set of tools to be used by the Army's Power Plant maintenance team.

1.1 Abstract. The Tool Kit, Lineman's Safety is organized to provide military maintenance engineers with specific hand tools that are designed to optimize protective insulating features for the user while working on live power lines in a military environment. This tool kit is to be used by each of the linemen who work in the Power Plant Maintenance Team. The general design and components of the tool kit are specified to assure that the kit serves both work and safety needs of linemen. The tool kit may typically enable a mission to secure a power plant and restore it to operation. Some specific tools are insulated to protect the user through a 1,000-volt ac hazard.

2. Applicable Documents. The following documents form a part of this DFP to the extent applicable. Unless otherwise specified, the documents shall be the latest issued as listed the Department of Defense Index of Specifications and Standards (DODISS), and Supplement thereto, cited in the solicitation.

a. U.S. Department Of Labor. All applicable Occupational Safety And Health Administration (OSHA) Title 29 CFR regulations including, but not limited to the following:

- (1) Electric power generation, transmission, and distribution (1910.269).
- (2) Tools and protective equipment (1926.951).

Beneficial comments (recommendations, additions, deletions) and any pertinent data which may be use in improving this document should be addressed to: HQ ARDEC, AMSTA-AR-WEP-RB, Rock Island IL 61299-7300.

AMSC N/A

FSC 4940

DISTRIBUTION STATEMENT A. Approved for public release; distribution is unlimited. (Unless otherwise indicated, copies of regulation are available from the Superintendent of Documents, Government Printing Office, Washington, DC 20402-0001; or see Laws & Regulations at <http://www.osha-slc.gov/>).

- b. Commercial Item Description
A-A-59487 Padlock (Key Operated)

- c. American Society For Testing And Materials (ASTM)
 - ASTM D3951 Standard Practice for Commercial Packaging
 - ASTM F1505 Standard Specification for Insulated and Insulating Hand Tools
 - ASTM E 18 Standard Test Methods for Rockwell Hardness and Rockwell Superficial Hardness of Metallic Materials

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

- d. American Society of Mechanical Engineers (ASME)
 - ASME B107.8M Adjustable Wrenches
 - ASME B107.13M Pliers, Long Nose, Long Reach
 - ASME B107.20M Pliers (Lineman's, iron worker's, gas, glass, fence, and battery)

(Application for copies should be addressed to the American Society of Mechanical Engineers, Three Park Avenue, New York, NY 10016-5990)

- e. American National Standards Institute (ANSI)
 - ANSI J6.6-1971 Standard Specification for Rubber Insulating Gloves (29 CFR 1910.6, 1926.951(a)(1)(i))

(Available for purchase from American National Standards Institute (ANSI), 11 West 42nd St., New York, NY 10036.)

2.1 Order of precedence. In the event of a conflict between the text of this document and the references cited herein (except for associated detail specifications, specification sheets, or MS standards), the text of this specification shall take precedence. Nothing in this document, however, shall supersede applicable laws and regulations unless a specific exemption has been obtained.

3.0 REQUIREMENTS

3.1 SUBMISSIONS.

3.1.1 First article. When specified, a sample shall be subjected to first article inspection (See paragraph 4.4.1). Prior to first article submission, the contractor may repair or replace any component that does not meet the requirements of this DFP. Once first article is submitted, the design shall be considered final and fixed – NO REPLACEMENT OR REPAIR SHALL BE ALLOWED.

3.1.2 Production. One unit, chosen at random from the production lot, shall be inspected 100% for the requirements of this DFP.

3.2 Tool Kit, Lineman's Safety. The pictures of the tools shown in this section are for reference only and may not be the exact technical requirements if each paragraph. Rubber protective equipment shall be in accordance with the provisions of the ANSI, ANSI J6 series, per OSHA standards, Title 29 CFR 1926.951.

3.2.1 Wrench, adjustable, insulated. The wrench shall be 10 inches nominal and shall have an insulated adjustment nut and shall meet the requirements of Type I, Class 1 of ASME B107.8M. The insulation shall comply with ASTM F 1505. A typical adjustable insulated wrench is shown below.



3.2.2 Pliers, high leverage, insulated. The pliers shall be 9 inches nominal and shall meet the requirements of Type II class 3 of ASME 107.20M. Insulation shall comply with ASTM F 1505. A typical insulated lineman's pliers, high leverage is shown below.



3.2.3 Cutters, diagonal, high leverage, insulated. The cutter shall be 8 in (200mm) long. The cutters edge hardness shall be no less than 64 Rockwell C Scale (HRC). Insulation shall comply with ASTM F 1505. A typical insulated diagonal cutter is shown below.



3.2.4 Pliers, long nose, insulated. The cutter shall be 8 inch nominal Type III, Class 1, Style A, per ASME B107.13M. The pliers shall have a wire cutting capacity of .09 in (2.2mm), medium wire, and 0.13 in (3.2mm), for soft wire. Insulation shall comply with ASTM F1505. A typical insulated long nose pliers is shown below.



3.2.5 Shears, cable cutting, insulated. The shears shall be 8 inches long and shall be capable of cutting copper cable single-conductor wire up to .025 sq inches (16 sq mm), multiple wires up to .078 sq inches (50 sq mm), fine-stranded up to .108 sq inches (70 sq mm) and solid cable .15 x .24 sq inches (4x6 sq mm). The shears shall also be capable of cutting aluminum wire up to .108 sq inches (70 sq mm). Insulation shall comply with ASTM F 1505. A typical insulated cable-cutting shear is shown below.



3.2.6 Pliers, multiple slip joint, insulated. The alligator pliers shall be 12 inch (315mm +/- 20mm) long. The cutting teeth shall have hardness of no less than 62 HRC. The pliers' insulation shall comply with ASTM F 1505. A typical insulated pliers is shown below.



3.2.7 Knife, dismantling, insulated. The knife shall be 7 ¼ inch long and constructed with a replaceable blade. A hinged blade-guard shall be integrated to the handle and shall include a safety handle. The handle shall comply with ASTM F1505. A typical insulated dismantling knife is shown below.



3.2.8 Screwdriver, flat tip, insulated. Three screwdrivers are required, as per size specified in the Table below. Insulation shall comply with ASTM F 1505.

Nominal Size (thickness x tip width)		Length		Min Handle Size	
Inch	mm	inch	mm	inch	mm
.031 x 5/32	0.8 x 4.0	4	100	3 ½	90
.047 x 1/4	1.2 x 6.5	6	150	4	110
.063 x 3/8	1.6 x 10.0	8	200	5	125

A typical insulated flat tip screwdriver is shown below.



3.2.9 Screwdriver, Phillips, insulated. Four Phillips Screwdrivers are required, as per nominal size specified in the Table below. Insulation shall comply with ASTM F 1505.

Nominal Size	Length		Min Handle Size	
	inch	mm	inch	mm
PH 0	2 3/8	60	2 ¾	70
PH 1	3 1/8	80	3 ½	90
PH 2	4	100	4	100
PH 3	6	150	4 ¼	110

A typical insulated Phillips screwdriver is shown below.



3.2.10 Screwdriver/holder, insulated. Four screwdrivers/holders are required, per size specified in the Table below. Insulation shall comply with ASTM F 1505.

Phillips	Length		Overall Length	
	inch	mm	Inch	mm
#1	6	150	10	250
#2	7	175	11	275
Flat 1/4	7	175	11	275
Flat 3/16	6	150	10	250

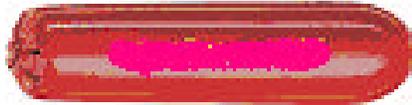
A typical insulated Phillips screwdriver/holder is shown below.



3.2.11 Caps, slip-on, insulated. Three self-clamping slip-on caps are required, for protection against bare live cable ends. Caps shall be made of plastic and shall be tested in accordance with ASTM F 1505 for use with 1,000 volts AC. The caps shall meet the requirement as specified in the following Table:

Length		Inside Diameter	
inch	mm	inch	mm
3 1/8	80	3/8	10
4	100	3/4	20
4 1/4	110	1 1/4	30

A typical insulated slip-on cap is shown below.



3.2.12 Hex Wrench, T-Handle. Seven Hex Wrenches, T Handle in the following sizes are required 3/16", 7/32", 1/4", 5/16", 3/8", 7/16", and 1/2". Insulation shall comply with ASTM-F-1505.



3.2.13 Tape, measuring The tape shall have a one-inch wide flexible steel blade. The tape shall be capable of accurately measuring up to 26 feet and shall have a horizontal- extension stand-out-length of 8 feet. A suitable device shall be provided at the tip of the blade to reinforce it, reduce breakage and provide maximum pull out strength. Blade end movement shall maintain a true-zero feature for accurate inside and outside measuring. A positive lock shall be provided, to firmly hold the blade in place at any length, to prevent it from retracting into the case. The tape shall have stud markings, graduations in inches and centimeters. The tape shall be heavy-duty, contrasting color with numbers being darker than the background. The tape measure shall be marked in 1/16inch increments. The tape case shall be ribbed for a comfortable slip-resistant grip. It shall contain a release lock for automatic rewind. A typical measuring tape is shown below.



3.2.14 Tool box. Each Lineman's Safety Kit shall be furnished with a toolbox capable of carrying all the tools supplied in the kit. The toolbox shall be corrosion resistant and may be of any material. The toolbox shall permit stacking of up to three fully loaded boxes without harm to its top surface. The toolbox shall be lockable; the locks shall conform to Commercial Item Description A-A-59487. The padlocks shall be keyed individually. Padlocks do not require chains. Padlocks shall be of solid construction either brass or bronze 1/4" to 5/16" shackle diameter and a minimum of 7/8" clearance between body and shackle. The toolbox shall be provided with carrying handle(s) the handle or handles shall be positioned to ensure carrying stability. The toolbox shall be capable of carrying up to 37 pounds.

3.2.14.1 Each toolbox shall have as many foam filled trays as needed to hold all the tools of the Lineman's Safety Kit. The foam filled trays shall be stackable and shall fit one on top of the other and shall be removable from the toolbox. The foam filled trays shall fill the toolbox but not so tight that they cannot be removed from the toolbox to reveal other foam filled trays underneath it and that the foam is contoured to hold each tool in an individual pocket or retention feature. The foam filled trays shall retain tools in position to provide for rapid inventory of the tool load, to prevent metal-to-metal contact between different tools in the toolbox and to maintain the position of tools under rough handling and shipping conditions. In the event that polyethylene foam inserts are used, the inserts shall be made from 2-pound high density, closed cell, polyethylene foam. In the event that some material other than polyethylene is used for the foam filled trays, that material shall have the same or better chemical and physical stability as polyethylene when in contact with oils, greases, lubricants, fuels, acids, bases, coolant and cleaning agents. Combinations of materials may be used, such as polyethylene foam with polyethylene solid sheets or thermoformed polyethylene product. Each contoured retention feature shall allow easy removal of the tool and shall include as necessary pick holes, cut out or recessed areas.

3.2.14.2 Toolbox Drop Test. The toolbox carrying 37 pounds shall be capable of sustaining damage when drop tested per paragraph 4.5.2 from a height of five feet. The tool box shall be rejected for any defect that would affect its serviceability.

3.3 Lot formation. Lot formation shall comply with the provisions standard commercial practices.

3.4 Workmanship. The kit's quality of workmanship shall equal or exceed that provided to supply typical domestic commercial products of this type. The kits and all the components provided shall be uniform, neat, and clean and be free from irregularities and anomalies that degrade form, fit, function, performance, or appearance.

3.5 Markings. Information concerning the tools and the chest shall be provided on a permanent, water resistant, scuff resistant label which is permanently affixed to the inside of the lid of the chest. This information shall include: a) Government contract number and contractor name; b) date of acceptance (date DD250 is signed) month and year only and notation that all warranties are effective from the date of acceptance; c) nomenclature, manufacturer's part number, quantity per set, and unit cost of each tool; d) warranty applicable to each tool and the chest; e) instructions for warranty claim submittal via the internet at <https://aepe2.army.mil> (preferred method) or alternately via email to QAWQDRS@RIA.ARMY.MIL or via fax to 309-782-6653 or DSN 793-6653 (call 309-782-7698 or DSN 793-7698 for verification or assistance).

For the non-warranty ordering of replacement tools from the contractor, the procedures as determined by the contractor (including phone number, web site and email address if they are applicable) may be provided separately or included with or near the information required in items a) thru e) above. If provided separately from the information required in items a) thru e) above this information shall be provided on a permanent, water resistant, scuff resistant label which is permanently affixed to the inside of the lid of the chest.

4. Verifications. The tool kit offered shall be demonstrated in such a manner to verify that it meets all of the contract requirements. Verifications consist of visual inspections and performance demonstrations. Each requirement set forth in section 3 above shall be verified by one of these two types of verification. It is important to note that product verification is not a form of development testing. All testing to assure that the products offered are properly designed to perform as required shall have been completed with satisfactory results before Government personnel witness the demonstration of the product.

Table I– Containment For Lineman's Safety Tools:

Item	U/I	QTY	Paragraph	Warranty
Tape, Measuring	EA	1	3.2.13	lifetime
Tool box	EA	1	3.2.14	lifetime

Table II – Insulated Lineman's Tools

Item	U/I	QTY	Paragraph	Warranty
Wrench, adjustable	EA	1	3.2.1	12 mo
Pliers, high leverage	EA	1	3.2.2	12 mo
Cutters, Diagonal, high leverage	EA	1	3.2.3	12 mo
Pliers, long nose	EA	1	3.2.4	12 mo
Shears, cable cutting	EA	1	3.2.5	12 mo

Pliers, multiple slip joint	EA	1	3.2.6	12 mo
Knife, dismantling	EA	1	3.2.7	Mfr Ltd
Screwdriver, flat, 5/32 4" long	EA	1	3.2.8	12 mo
Screwdriver, flat, 1/4, 6" long	EA	1	3.2.8	12 mo
Screwdriver, flat, 3/8, 8" long	EA	1	3.2.8	12 mo
Screwdriver, Phillips, PH 0	EA	1	3.2.9	12 mo
Screwdriver, Phillips PH 1	EA	1	3.2.9	12 mo
Screwdriver, Phillips, PH 2	EA	1	3.2.9	12 mo
Screwdriver, Phillips, PH 3	EA	1	3.2.9	12 mo
Screwdriver/holder, Phillips	EA	1	3.2.10	Mfr Ltd
Screwdriver/holder, Phillips	EA	1	3.2.10	Mfr Ltd
Screwdriver/holder, flat, 3/16	EA	1	3.2.10	Mfr Ltd
Screwdriver/holder, flat, 1/4	EA	1	3.2.10	Mfr Ltd
Cap, cable, slip-on 3/8 ID	EA	1	3.2.11	none
Cap, cable, slip-on 3/4 ID	EA	1	3.2.11	none
Cap, cable, slip-on 1-1/4 ID	EA	1	3.2.11	none
Hex Wrench, T-Handle	SE	1	3.2.12	Mfr Ltd

4.1 Responsibility for verification. The contractor is responsible for the verification of all requirements set forth in this specification. The contractor shall demonstrate to the Government, in front of appointed witnesses, that the product offered for acceptance meets all of the specified requirements. The contractor may use his own, or any other, facilities suitable for the performance of product demonstration in accordance with the procedures specified herein, and subsequent product verification, unless disapproved by the Government.

4.2 Responsibility for compliance. All delivered items must meet all requirements of this contract. The absence of any verification requirements shall not relieve the contractor of the responsibility that all products submitted to the Government for acceptance comply with all requirements of the contract.

4.3 Visual inspection procedures. Visually, dimensionally, and manually examine the first two units to determine conformance with the requirements of 3.2.1 through 3.2.14.1, 3.5 and section 5 of this DFP. Visual examination shall include verification of dimensions, operation of movable parts, by hand, to assure proper functioning. Dimensional examination includes measuring dimensions, as specified in the applicable standards and weighing each component where applicable. Manual examinations shall include the operation of movable parts, by hand, to assure proper functioning. Failure of either sample unit to pass any examination shall be construed as a failure to present a product that meets the contract requirements.

4.4 Submissions.

4.4.1 First article. The first kit assembled and submitted to the Government shall be considered as the first article sample.

4.4.2 Production. After acceptance of the first article, any submissions thereafter shall be considered as a production lot sample.

4.5 Performance demonstration. The performance demonstration procedures specified in paragraphs 4.5.1 through 4.5.2 shall be performed during product performance verification. Failure of either sample unit to pass any of these verification procedures shall be construed as a failure to present a product that meets the contract requirements.

4.5.1 Insulated tools demonstration. Insulated tools shall meet the insulation design, handle, material, adhesiveness, insulation resistance, dielectric, and markings as per ASTM F 1505.

4.5.2. Box Drop Test. Load the toolbox with dummy load, or tools, with at least 37 pounds in its normally upright position, to a height of not less than five feet. Drop the box onto a concrete surface such that it falls with its bottom flat. Repeat at least six (6) times. The box shall be rejected if the hinges do not operate properly, if the lid cannot be opened and closed properly; or if there is any other defect that would affect its serviceability.

4.6 Hardness. Perform hardness tests on cutters and pliers per ASTM E18 to verify compliance with paragraph 3.2.3 and 3.2.6 respectively.

4.7 Lot formation The product shall be assembled into identifiable lots, sub lots, or batches. Each lot, or batch, shall consist of units of product of a singular type, grade, class, size and composition, manufactured under essentially the same conditions, and at essentially the same time. The lots, or batches, identified by the contractor shall be kept intact in adequate and suitable storage space. Although lot, or batch, size is not used to select a continuous sampling plan, the formation of lots, or batches, may remain desirable for reasons of homogeneity, shipping, convenience and facilitation of payment.

4.7.1 Lot numbering. Lot numbering shall conform to commercial lot numbering practices such that a trace-ability is assured.

4.8 Workmanship. Verify that kit's quality of workmanship is equal to or exceeds that provided to supply typical domestic commercial products of this type. Verify that kit and all the components provided are uniform, neat, clean, free from irregularities and anomalies that degrade form, fit, function, performance, or appearance.

4.9 Warranties. Different tools are offered with different warranties in the commercial market place. In recognition of this fact the Government requires that warranties as indicated in the tables I and II shall be provided for the tools as a minimum.

5. PACKAGING

5.1 Packaging. PRESERVATION, PACKING, AND PACKAGING. Preservation, Packing and Packaging shall be in accordance with ASTM-D-3951 plus the following additional requirements.

ADDITIONAL REQUIREMENTS:

Each complete Lineman's Safety Kit shall be packed in the toolbox that is part of the Lineman's Safety Kit. Tools shall be protected from galvanic corrosion by placing them in the foam cutouts that are made for them. The completed toolbox shall then be placed in a container that fits the toolbox i.e. not much room for the toolbox to move around inside the container. The container shall be of a type that prevents water, or water vapor, from entering so as to prevent the growth of fungus on the leather and cloth items, and rust on the metal items.

If oak or chestnut wood products are used in the performance of this contract, these wood or wood products must be free of all bark.

All wooden pallets, container interior blocking and bracing, and wood containers produced entirely or in part of nonmanufactured wood species shall be constructed of wood Heat Treated (HT) to a core temperature of 56 degrees Centigrade for 30 minutes, certified, and marked accordingly by an accredited agency recognized by the American Lumber Standards Committee (ALSC) in accordance with their Nonmanufactured Wood Packing Policy and Nonmanufactured Wood Packing Enforcement Regulations, both dated 30 May 2001

Unless otherwise specified herein, shipments to the same destination of identical items having a total packaged displacement exceeding 50 cubic feet shall be palletized; unless forklift - handling features, such as skids are included on containers.

Workmanship shall be such that when proper procedure is followed, materials and equipment being processed shall be provided the maximum protection against corrosion, deterioration, and shall be suitable for storage to the level of packaging specified.

NSN:

PRON:

NOMEN: Lineman's Safety Kit

Marking Requirements:

Container markings shall be in capital letters of equal height, shall be proportionate to the available marking space and shall contain the following information (if applicable) in the order listed

- a. NSN/NATO stock number.
- b. CAGE code of the company awarded the contract, and part number of the item as specified in the contract.
- c. Quantity and unit of issue.
- d. Level of protection and date packed.
- e. Contract or purchase order number.

Markings on the shipping container shall be grouped into three distinct categories, identification markings, contract data markings and address markings.

Identification Markings: (as applicable)

- a. NSN/NATO stock number.
- b. CAGE code of the company awarded the contract, and part number of the item as specified in the contract.
- c. Quantity and unit of issue
- d. Level of protection and date packed.
- e. Gross weight and cube.
- f. Item description or nomenclature.

Contract Data Marking: (as applicable)

The contract data marking placed under the identification markings, shall consist of the contract or purchase order number.

Address Markings:

The address markings placed to the right of the identification and contract data markings (if space is available) shall consist of the following information in the order shown.

NSN:

PRON:

NOMEN: Lineman's Safety Kit

- a. Control number or reference number (as a minimum, the Transportation Control Number (TCN) Shall be provided as the single standard shipment identification number)
- b. FROM MILITARY: Name and address of consignor (DOD Activity Address Code) and in the clear address if applicable
- c. FROM CONTRACTOR: Name and address of the contractor (including nine-digit zip code). When supplies are shipped from a subcontractor, only the name and address of the company awarded the contract shall be used.
- d. TO: Name and address of consignee (DOD Activity Address Code (DODAAC) and in the clear Address if applicable
- e. Piece number and total pieces (if more than one shipping container is used for the order).

In addition to the above information, the NSN/NATO stock number shall be bar coded on the unit packs and intermediate containers. The following shall be bar coded on the shipping container. All bar coding shall use the 3 of 9 format in accordance with AIM BC1

NSN/NATO stock number.

Contract or order number.

CAGE code of the company awarded the contract.

Contract Line Item Number (CLIN) if applicable.

6.0 NOTES

6.1 Intended use. This kit provides the necessary components to support the lineman's tool and is intended for use by communication and facility engineering personnel.