

NOT MEASUREMENT SENSITIVE

MIL-W-45562C
15 August 1992
SUPERSEDING
MIL-W-45562B
21 February 1984

MILITARY SPECIFICATION
WELDING AND SOLDERING EQUIPMENT, SUPPLIES,
AND ACCESSORIES, PACKAGING OF

This specification is approved for use by all Departments and Agencies of the Department of Defense.

1 SCOPE

1.1 This specification covers the requirements for materials, methods of cleaning, drying, preservation applications, packing and marking of welding and soldering equipment, supplies and accessories for the various levels of protection for storage, shipping and handling.

2 APPLICABLE DOCUMENTS

2.1 Government documents.

2.1.1 Specifications and standards. The following specifications and standards form a part of this document to the extent specified herein. Unless otherwise specified, the issues of these documents are those listed in the issue of the Department of Defense Index of Specifications and Standards (DODISS) and supplement thereto, cited in the solicitation (see 6.2)

Beneficial comments (recommendations, additions, deletions) and any pertinent data which may be of use in improving this document should be addressed to: Commander, US Army Armament Research, Development and Engineering Center, ATTN: SMCAR-EST-P, Rock Island, IL 61299-7300 by using the self-addressed Standardization Document Improvement proposal (DD Form 1426) appearing at the end of this document or by letter.

AMSC N/A

DISTRIBUTION STATEMENT A. Approved for public release; distribution is unlimited.

AREA PACK

MIL-W-45562C

SPECIFICATIONS

FEDERAL

A-A-883	- Tape, Pressure Sensitive Adhesive, Masking
O-S-801	- Sulfuric Acid, Electrolyte; for Storage Batteries
UU-S-48	- Sacks, Shipping, Paper
UU-T-81	- Tags, Shipping and Stock
PPP-B-15	- Bags and Envelopes, Callophane, For Packaging
PPP-B-35	- Bags, Textile-Shipping, Burlap, Cotton and Waterproof Laminated
PPP-B-140	- Battery, Storage, Industrial, Automotive and Navy Portable (Except Aircraft), Packaging of
PPP-B-566	- Boxes, Folding, Paperboard
PPP-B-576	- Boxes, Wood-Cleated, Veneer, Paper Overlaid
PPP-B-585	- Boxes, Wood, Wirebound
PPP-B-591	- Boxes, Shipping, Fiberboard, Wood-Cleated
PPP-B-601	- Boxes, Wood, Cleated-Plywood
PPP-B-621	- Boxes, Wood, Nailed and Lock-Corner
PPP-B-636	- Boxes, Shipping, Fiberboard
PPP-B-676	- Boxes, Setup
PPP-B-1364	- Box, Corrugated Fiberboard, High-Strength, Weather-Resistant, Double-Wall
PPP-C-96	- Cans, Metal, 28 Gage and Lighter
PPP-C-795	- Cushioning Material, Flexible, Cellular, Plastic Film For Packaging Applications
PPP-C-843	- Cushioning Material, Cellulosic
PPP-D-723	- Drums, Fiber
PPP-P-291	- Paperboard, Wrapping and Cushioning
PPP-T-60	- Tape: Packaging, Waterproof

MILITARY

MIL-C-104	- Crates, Wood; Lumber and Plywood Sheathed, Nailed and Bolted
MIL-P-116	- Preservation, Methods of
MIL-B-117	- Bags, Sleeves, and Tubing, Interior Packaging
MIL-B-121	- Barrier Material, Greaseproofed; Waterproofed, Flexible
MIL-H-775	- Hose, Rubber, Plastic, Fabric, or Metal (Including Tubing); and Fittings, Nozzles and Strainers, Packaging of
MIL-C-3774	- Crates, Wood; Open 12,000- and 16,000-pound Capacity
MIL-C-3955	- Cans, Fiber, Spirally Wound
MIL-C-5501	- Caps and Plugs, Protective, Dust and Moisture Seal
MIL-I-8574	- Inhibitors, Corrosion, Volatile, Utilization of
MIL-E-10062	- Engines: Preparation for Shipment and Storage of
MIL-W-10430	- Welding Rods and Electrodes; Preparation For Delivery of
MIL-P-15011	- Pallets, Material Handling, Wood, Post Construction, 4-Way Entry
MIL-C-16173	- Corrosion Preventive Compound, Solvent Cutback, Cold-Application
MIL-E-16298	- Electric Machines Having Rotating Parts and Associated Repair Parts; Packaging of
MIL-E-17555	- Electronic and Electrical Equipment, Accessories, and Repair Parts; Packaging and Packing of
MIL-L-21260	- Lubricating Oil, Internal Combustion Engine, Preservative and Break-In

MIL-W-45562C

- MIL-F-22019 - Film, Transparent, Flexible, Heat Sealable, Volatile Corrosion Inhibitor Treated
- MIL-B-22020 - Bags, Transparent, Flexible, Sealable, Volatile Corrosion Inhibitor Treated
- MIL-B-26701 - Bottles, Screw Cap and Carboys Polyethylene Plastic
- MIL-C-52950 - Crates, Wood, Open and Covered
- MIL-V-62038 - Vehicles, Wheeled: Preparation for Shipment and Storage of

STANDARDS

FEDERAL

FED-STD-101 - Test Procedures for Packaging Materials

MILITARY

- MIL-STD-129 - Marking for Shipment and Storage
- MIL-STD-147 - Palletized Unit Loads for 40" x 48" Pallets
- MIL-STD-1186- Cushioning, Anchoring, Bracing, Blocking and Waterproofing; with Appropriate Test Methods
- MIL-STD-1190- Minimum Guidelines for Level C Preservation, Packing and Marking
- MIL-STD-2073-1 DoD Materiel Procedures for Development and Application of Packaging requirements.

(Unless otherwise indicated, copies of federal and military specifications and standards are available from the Standardization Documents Order Desk, Bldg 4D, 700 Robbins Avenue, Philadelphia, PA 19111-5094.)

2.2 Non-Government publications. The following document(s) form a part of this document to the extent specified herein. Unless other wise specified, the issues of the documents which are DoD adopted are those listed in the issue of the DODISS cited in the solicitation. Unless other wise specified, the issues of documents not listed in the DODISS are the issues of the documents cited in the solicitation (see 6.2).

- ASTM D 3951 - Minimum Guidelines for Level C Preservation, Packing and Marking
- ASTM D 3953 - Strapping, Flat Steel And Seals
- ASTM D 4675 - Selection and Use of Flat Strapping Materials

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

3 REQUIREMENTS

3.1 First Article. When specified (see 6.2), the supplier shall furnish one complete pack for first article inspection. Whenever first article inspection is specified or performed, the packaging tests may be performed also (see paragraphs 3.9 and 4.2.1). The first article may be either a preproduction pack or an initial production pack which conforms to the requirements of this specification. In either case, the approved first article and the production packs shall be identical and in

MIL-W-45562C

accordance with the terms of the contract. Approval of the first article shall not relieve the supplier of the responsibility to furnish equipment and packaging in accordance with the requirements of this specification.

3.2 General. Welding and soldering equipment, supplies and accessories shall be preserved, packed and marked in accordance with this specification or other specifications or standards as described herein. Specified requirements are assigned on the basis of the type of unit protection most commonly required for a specific item or equipment. Methods of preservation in general are based on susceptibility of the item to corrosion or other forms of deterioration, adaptability to the use of a contact preservative, weight, size or need for mechanical or physical protection.

3.3 Materials. Materials used in preservation and packing shall be as specified herein and in applicable specifications or standards. Materials not specifically designated shall be of a good quality, suitable for the purpose intended and specified and subject to approval by the procuring activity. Materials shall be new and free from all defects and imperfections which may affect the serviceability of the completed package or packed product.

3.4 Disassembly and parts marking. When practical, for the protection of components, attachments and accessories against damage, pilferage or to reduce cubage, items may be disassembled only to a necessary basic degree. Disassembled parts shall be preserved as specified and anchored, braced, blocked and cushioned to prevent damage in accordance with MIL-STD-1186. Disassembled parts shall be clearly and legibly marked as to identity and proper location on the assembled item. All fasteners removed during disassembly shall be secured in one of the mating parts. A part shall not be removed from an assembly unless it can be reassembled readily in the field without special skills or tools. Disassembled parts shall be marked, where necessary, with instructions to facilitate reassembly. Removed parts and mating parts on the item shall be marked by stenciling, on the part, or by use of tags conforming to UU-T-81, type A, class 2; size and marking of tags shall be in accordance with the requirements of MIL-STD-129 and firmly secured to each individual part.

3.5 Cleaning and drying. All surfaces of the item(s) shall be cleaned and dried by one process or a combination of processes listed in MIL-P-116. All cleaning or drying processes used shall not be injurious to the item(s). Special cleaning and drying procedures may be employed only upon approval by the procuring activity, as specified (see 6.2)

3.6 Preservation. Preservation shall be level A, C or Commercial, as specified (see 6.2).

3.6.1 Level A.

3.6.1.1 Preservation (methods of). Preservative types and methods of preservation indicated by symbols herein shall conform to the requirements for the corresponding symbols in MIL-P-116. The preservative type and preservation method shall be as specified in Table I herein. Application of preservatives shall be in accordance with the applicability and guidelines of MIL-P-116. When a preservative is required, but not specified, the selection shall be at the option of the supplier.

3.6.1.1.1 Volatile corrosion inhibitors (VCI, P-18). When specified (see 6.2), VCI treated materials may be used as an alternate to the preservative indicated in column 3 of Table I. The utilization of volatile corrosion inhibitors shall be in

MIL-W-45562C

accordance with MIL-I-8574. Unless otherwise specified (see 6.2), application of a contact preservative with VCI will not be required. Transparent, flexible, heat sealable VCI treated films and bags shall conform to MIL-F-22019 and MIL-B-22020 as applicable.

3.6.1.1.2 External metal surfaces. Critical, ferrous metal surfaces, other than stainless steel, shall be coated with type P-2 or P-11 preservative and over-wrapped with barrier material conforming to MIL-B-121, grade A. Barrier material shall be secured with tape conforming to PPP-T-60, Type IV. Noncritical ferrous metal surfaces, not painted or plated, shall be coated with type P-2 or P-11 preservative and overwrap as stated above. Completely painted items shall be processed method III.

3.6.1.1.3 Internal metal surfaces. Internal metal surfaces normally in contact with oil shall be coated with Grade 30 of MIL-L-21260, P-10 preservative and those normally in contact with water shall be coated with grade 5 of MIL-C-16173, P-21. Application may be by flushing, fogging or spraying, avoiding excessive use of preservatives. After thoroughly draining, the threads of drain plugs shall be coated with type P-10 preservative and reinserted. When plugs are not provided, openings shall be closed with plugs or caps conforming to MIL-C-5501 or with tape conforming to PPP-T-60, type IV.

3.6.1.1.4 Assembled equipment. Each assembled piece of equipment shall be preserved as a complete unit in accordance with the applicable method of MIL-P-116 as specified in Table I. Preservation requirements for equipment not covered by Table I shall be as specified by the procurement officer (see 6.2).

3.6.1.1.5 Engines. Engines shall be preserved in accordance with level A requirements of MIL-E-10062 and the applicable preparation types and methods therein.

3.6.1.1.6 Electrical component parts. Electrical component parts and motors shall be preserved in accordance with level A requirements of MIL-E-16298 and MIL-E-17555, as applicable.

3.6.1.1.7 Technical publications. Unless other wise specified (see 6.2), technical publications and handbooks shall be preserved in accordance with the requirements for method IC-1 and secured to the basic unit.

3.6.1.1.8 Sets, kits and outfits w/carrying case. Item(s) and equipment furnished in sets, kits and outfits shall be individually preserved per Table I, wrapped and placed in slots or contour cutouts provided in the carrying case, or shall be arranged within the set or kit container in a compact manner. Cushioning shall be provided to prevent movement or damage during shipment, storage and handling.

3.6.1.2 Unit pack quantity and container. The unit pack quantity shall be as specified (see 6.2). Unless otherwise specified or required by the preservation method (see 6.2), the unit containers shall conform to one or more of the following specifications.

UU-S-48	- Sacks, Shipping, Paper
PPP-B-15	- Bags and Envelopes, cellophane, for packaging
PPP-B-35	- Bags, Textile-Shipping, Burlap, Cotton and Waterproof Laminated
PPP-B-566	- Boxes, Folding, Paperboard
PPP-B-636	- Boxes, Shipping Fiberboard

MIL-W-45562C

- PPP-B-676 - Boxes, Setup
- PPP-B-1364 - Box, Corrugated Fiberboard, High-Strength, Weather-Resistant, Double-Wall
- PPP-C-96 - Cans, Metal, 28 Gage and Lighter (Type V, Class 1 or 2)
- PPP-D-723 - Drums, Fiber
- MIL-B-117 - Bags, Sleeves and Tubing-Interior Packaging
- MIL-C-3955 - Cans, Fiber, Spirally Wound
- MIL-B-26701 - Bottles, Screw Cap and Carboys Polyethylene Plastic

When the unit container is also the shipping container, the containers of 3.7 shall apply. Carrying cases may serve as the unit container; however, when used as the inner container of a specific method of packaging, all corners, hinges and latches shall be cushioned to prevent rupturing of barrier material. Sets, kits and outfits furnished in canvas, leather or plastic shall be unit packaged submethod IC-3. Sets, kits and outfits furnished in metal or wood cases not exceeding ten pounds shall be unit packaged submethod IC-2; those exceeding ten pounds shall be unit packaged method I or III, as applicable. All seams, corners and joints shall be waterproof sealed with tape in accordance with the appendix to PPP-B-636. When specified (see 6.2), unit containers not conforming to weather-resistant requirements shall be overpacked or overwrapped with weather-resistant boxes or barrier material as applicable. Closure of containers shall be in accordance with the applicable container specification and the appendix thereto.

3.6.1.2.1 Transparent plastic packages. When specified (see 6.2), transparent plastic packages conforming to methods IC-7 or IC-9 may be utilized in lieu of the methods specified in Table I herein. Shaped, preformed or molded packages shall incorporate provisions for separating unit quantities by scoring or other media. The plastic shall be compatible with other material utilized in the process of preservation.

3.6.1.3 Cushioning and cushioning materials. Item(s) will be cushioned as required for the method of preservation in accordance with the guidelines and criteria of MIL-P-116. Cushioning materials used within the unit package shall conform to PPP-P-291, PPP-C-795 or PPP-C-843. Other cushioning materials may be utilized provided they conform to the cushioning requirements of MIL-P-116 and are non-corrosive and non-dusting. Excessive use of cushioning material shall be avoided.

3.6.1.4 Intermediate packs. When specified (see 6.2), unit packs shall be intermediate packaged in containers conforming to PPP-B-636, grade W5c or V3c. Unless otherwise specified, intermediate quantities shall be governed by the size and weight limitations of the applicable container specification. Cushioning shall be provided as necessary to control movement and damage within the container. Closure shall be in accordance with the container specification and the appendix thereto.

3.6.1.4.1 Air Force. Intermediate pack, quantity and container for the Air Force shall be in accordance with MIL-STD-2073-1.

3.6.2 Level C preservation. Level C preservation of welding and soldering equipment shall conform to the requirements of MIL-STD-1190.

3.6.3 Commercial preservation. Commercial preservation shall be in accordance with the requirements of ASTM D 3951 (Navy level C).

MIL-W-45562C

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

3.7.1 Level A. Unless otherwise specified (see 6.2), welding and soldering equipment, supplies and accessories preserved as specified (see 3.6), shall be packed in shipping containers conforming to the following specifications.

ASTM D 3953 - Strapping, Flat Steel and Seals
 ASTM D 4675 - Selection and Use of Flat Strapping Materials
 PPP-B-585 - Boxes, Wood, Wirebound (Class 3 Use)
 PPP-B-601 - Boxes, Wood, Cleated-Plywood (Overseas Type)
 PPP-B-621 - Boxes, Wood, Nailed and Lock-Corner (Class 2)
 PPP-D-723 - Drums, Fiber
 MIL-C-104 - Crates, Wood; Lumber and Plywood Sheathed, Nailed and Bolted
 MIL-C-3774 - Crates, Wood; Open 12,000- and 16,000-Pound Capacity
 MIL-P-15011 - Pallets, Material Handling, Wood, Post Construction, 4-Way Entry
 MIL-C-52950 - Crates, Wood, Open and Covered

Selection of container shall be governed by the size and weight limitations of the applicable container specification. Closure and strapping shall be in accordance with applicable container specifications except the strapping shall conform to ASTM D 3953, type I or IV, finish A. When the gross weight exceeds 200 pounds or the container length and width is 48 inches by 24 inches or more and the weight exceeds 100 pounds, 3 x 4 inch skids (laid flat) shall be applied in accordance with the requirements of the container specification. Unless otherwise specified (see 6.2), trailer mounted welding equipment shall be shipped mobile (unboxed).

Arrangement of contents, cushioning, anchoring, blocking and bracing shall be in accordance with MIL-STD-1186. Closure and strapping of shipping containers shall be in accordance with the applicable container specification and the appendix thereto.

3.7.2 Level B. Unless otherwise specified (see 6.2), welding and soldering equipment, supplies and accessories preserved as specified (3.6), shall be packed in shipping containers conforming to the following specifications.

ASTM D 3952 - Strapping, Flat Steel and Seals
 ASTM D 4675 - Selection and Use of Flat Strapping Materials
 PPP-B-576 - Boxes, Wood-Cleated, Veneer, Paper Overlaid
 PPP-B-585 - Boxes, Wood, Wirebound (Class 1 or 2 Use)
 PPP-B-591 - Boxes, Shipping, Fiberboard, Wood-Cleated (Class II)
 PPP-B-601 - Boxes, Wood, Cleated-Plywood (Domestic Type, Style A, B, I or J)
 PPP-B-621 - Boxes, Wood, Nailed and Lock-Corner (Class 1)
 PPP-D-723 - Drums, Fiber
 MIL-C-104 - Crates, Wood; Lumber and Plywood Sheathed, Nailed and Bolted
 MIL-C-3774 - Crates, Wood; Open 12,000- and 16,000-Pound Capacity
 MIL-P-15011 - Pallets, Material Handling, Wood, Post Construction, 4-Way Entry
 MIL-C-52950 - Crates, Wood, Open and Covered

Selection of container shall be governed by the size and weight limitations of the applicable container specification. Closure and strapping shall be the same as Level A. Unless otherwise specified (see 6.2), trailer mounted welding equipment shall be shipped mobile (unboxed).

MIL-W-45562C

Arrangement of contents, cushioning, anchoring, blocking and bracing shall be in accordance with MIL-STD-1186. Closure and strapping of shipping containers shall be in accordance with the applicable container specification and the appendix thereto.

3.7.3 Level C packing. Level C packing of welding and soldering equipment shall conform to the requirements of MIL-STD-1190.

3.7.4 Commercial packing. Commercial packing shall be in accordance with the requirements of ASTM D 3951 (Navy level C).

3.7.5 Unitized and containerized loads. When specified (see 6.2), items packed as specified in 3.7 shall be unitized or containerized in accordance with MIL-STD-147.

3.8 Marking. All levels of preservation and packing shall be marked in accordance with the requirements of MIL-STD-129. Special markings in accordance with MIL-STD-129 as required to provide the proper protection (see 6.2). Bar code markings are required and shall be in accordance with MIL-STD-129.

3.9 Performance.

3.9.1 Rough Handling. The completed unit pack, shipping container(s) and all contents shall be capable of withstanding the shipping and handling conditions expected from fork lift handling and truck transport. The container, its contents and the packaging shall not be damaged, functionally or physically, or items displaced by the appropriate rough handling test(s) specified elsewhere in this specification or in the contract (see 4.4.1 and 6.2).

3.9.2 Exposure. When specified, the completed pack shall provide protection from exposure to the elements sufficient to prevent damage to the packaged item(s) when the pack is subjected to the cyclic exposure test of MIL-P-116 as stated in FED-STD-101. Following the test, the tested package, when opened, shall show no evidence of moisture nor shall the packaged item show any signs of corrosion.

3.10 Workmanship. Workmanship shall be such that when the proper procedure is followed, material and equipment being processed will receive the maximum protection against corrosion, deterioration and damage during handling, shipment and storage.

4 QUALITY ASSURANCE PROVISIONS

4.1 Responsibility for inspection. Unless otherwise specified in the contract, the supplier is responsible for the performance of all inspect and test requirements as specified herein. Except as otherwise specified in the contract, the supplier may use his own or any other facilities suitable for the performance of the inspection and test 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 Responsibility for compliance. All items shall meet the requirements of section 3. The inspection set forth in this specification shall become a part of the contractors overall inspections system or quality program. The absence of any inspections requirements in this specification shall not relieve the supplier of responsibility of ensuring that all products or supplies submitted to the Government

MIL-W-45562C

for acceptance comply with all requirements of the contract. Sampling inspection, as part of manufacturing operations, is an acceptable practice to ascertain conformance requirements, however, this does not authorize submission of known defective material, either indicted or actual, nor does it commit the Government to accept defective material.

4.2 Classification of inspection. The inspection requirements specified herein are classified as follows:

- a. First article inspection (see 4.2.1).
- b. Quality conformance inspection (see 4.2.2).

4.2.1 First article inspection. When a first article sample is required by the contract or purchase order, the supplier shall subject the first article pack to the examinations in 4.3 and the tests in 4.4 and 4.5 to determine conformance with the requirements of this specification. Failure of the first article to pass any of the tests shall be cause for rejection.

4.2.2 Quality conformance inspection. Quality conformance inspection shall be applied to each production unit offered for acceptance under the contract and shall consist of (a) through (c) as follows. Failure of any unit to pass an examination, test or inspection shall be cause for rejection.

- (a) Product examination (see 4.3)
- (b) Packaging validation test (see 4.4)*
- (c) Cyclic exposure test (see 4.5)*

* This test can be eliminated if it was performed during a first article test.

4.2.3 Sampling. Sampling for quality conformance inspection shall be performed as listed with all samples selected randomly.

<u>Inspection or Test</u>	<u>Lot or Batch Size</u>	<u>Sample Size</u>
Product examination (4.3)	1-150	13
Packaging validation tests (4.4)	1-150	1
Cyclic exposure test (4.5)	1-150	1

The lots shall not exceed the maximum sizes indicated above. If lot size is less than or equal to sample size, 100% inspection is required. Each lot shall be accepted with no defects and rejected if one or more defects are found.

4.3 Product examination. Visually, dimensionally and manually examine each unit to determine conformance with the requirements of 3.3 through 3.8 and 3.10. Visual examination shall include verification of completeness of manufacture and assembly, conformance to specified standards, adequacy of markings, proper cleaning, and freedom from the identified defects. Dimensional examination includes measuring dimensions as specified. Manual examinations shall include the operation of movable parts by hand to assure proper functioning. The examination provisions may be applied at the earliest practical point in manufacturing at which it is feasible to inspect for acceptance without risk of change in the characteristic by subsequent operation. Failure of the contractor to provide objective evidence that the item and its components have passes the examinations prescribed for them by the contractor's inspection system shall be cause for rejection.

MIL-W-45562C

4.4 Packaging validation tests. After the Quality Assurance inspection and tests have been successfully completed, one unit, packaged in accordance with the requirements of Part I - Section D, Packaging, of the contract, shall be selected at random and subjected to the following rough handling tests specified in FED-STD-101. If a First Article Test (FAT) is required by the contract, the packaging validation test shall be conducted on the unit used for the FAT. If a FAT is not required by the contract, then the unit from the first production lot used for the tests in paragraphs 4.6.3 through 4.6.8 shall be used for the packaging validation tests. The apparatus used shall be as described in FED-STD-101. A dummy load shall not be used.

All tests are to be conducted under ambient conditions. Environmental temperature/humidity tests are not required. After the test has been completed, the container shall be inspected. Defects in accordance with those described below shall be cause for rejection. The unit shall then be unpacked and again subjected to its Quality Assurance inspections and tests to reaffirm that the unit meets the requirements specified in the Part I - Section C - Description/Specifications Product Engineering Requirements of the contract. The tests that need not be repeated after the packaging validation tests shall be specified. After all requirements have been met, the unit shall be inspected and repackaged before submission for government acceptance. After testing, any damage to the packaging shall be replaced (if necessary, reevaluated) prior to acceptance of the lot.

4.4.1 Mechanical handling test. Test shall be conducted using Method 5011.1, Paragraph 6.2 (Lifting and transportation by forklift truck) of FED-STD-101. Criteria for passing/failing of the test is stated in Paragraph 7.1.5 of Method 5011.1.

4.5 Cyclic exposure test. The cyclic exposure test shall be conducted on the completed pack in accordance with paragraph 4.4.6, test A or B in MIL-P-116. After this test is completed the test pack shall be opened. Any evidence of moisture or any signs of corrosion inside the completed pack shall be cause for rejection.

5 PACKAGING

5.1 The section is not applicable to this specification.

6 NOTES

(This section contains information of a general or explanatory nature that may be helpful, but is not mandatory).

6.1 Intended use. This specification is intended to be used for reference in section 5 of commodity specifications or direct reference in contracts or orders. The cleaning, drying, preservation application, packing and marking requirements specified herein are intended to insure proper and safe storage and transportation of welding and soldering equipment, supplies and accessories for direct shipment to Government activities or shipments to be processed at a military activity or agency.

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

- a. Title, number and date of this specification.
- b. First article, when required (see 3.1).
- c. Special cleaning processes or drying procedures, if required (see 3.5).
- d. Specify level A, C or Commercial preservation (3.6)
- e. When VCI treated materials are to be used as a preservative (see 3.6.1.1.1).

MIL-W-45562C

- f. When a contact preservative is required with VCI (see 3.6.1.1.1).
- g. The method of preservation for assembled equipment not listed in Table I (see 3.6.1.1.4).
- h. Packaging of technical publication, if different (see 3.6.1.1.7).
- i. Unit pack quantity and unit container to be utilized, if different (see 3.6.1.2).
- j. If unit container is to be overpacked or overwrapped (see 3.6.1.2).
- k. When unit pack requires an intermediate packaging (see 3.6.1.4).
- l. Specify level A, B, C or Commercial packing (see 3.7).
- m. When trailer mounted welding equipment is to be boxed (see 3.7.1, 3.7.2).
- n. Selection of shipping container to be utilized, if different (see 3.7.1 and 3.7.2).
- o. When item(s) are to be unitized or containerized (see 3.7.5).
- p. Special marking, if required (see 3.8).
- q. Rough handling test, if required (see 3.9.1, 4.2.1)
- r. Cyclic exposure test, if required (see 3.9.2, 4.2.1)

6.2.1 Level B packing. Level B packing is intended to provide adequate protection against known conditions that are less hazardous than Level A is designed to meet. The design of Level B is based on firmly established knowledge of shipment, handling and storage conditions to be encountered, and on the determination that the cost of preparation is less than for Level A (see 3.7.2).

6.3 Disposability methods. Environmental Pollution Preventative Measures are contained in the materials' specifications indicated herein. Refer to the materials' specifications (or preparing activity) for recommended disposability methods.

6.4 Subject term (key word) listing.

Welding
Soldering
Rough Handling
Preservative
Packing
Level.

MIL-W-45562C

TABLE I. Preservation-packaging and packing of welding and soldering supplies and accessories.

ITEM	Preservation-Packaging, methods of MIL-P-116	Applicable type of Preservative MIL-P-116	Special Remarks
COLUMN 1	COLUMN 2	COLUMN 3	COLUMN 4
ADAPTER			
Acetylene Hose to Reg.	III		PPP-B-566
Oxy. Acety. Fitting	III		PPP-B-566
Propane Fitting	III		PPP-B-566
Regulator	III		PPP-B-566
Tip, Tube to Hose	III		PPP-B-566
APRON			
Welders	IC-3	None	
BAG			
Canvas	IC-3	None	
Torch Equipment	IC-3	None	
Welding Rods	IC-3	None	
BALL			
Relief Valve	III		
BAR			
Clamp Tool Post	I	P-1	
BATTERY			See
Storage			PPP-B-140
BODY			
Fixture Tool Post	I	P-2	
Welding Torch	IC-2	None	
BOX			See
Tool	I or III	P-1 or P-19	3.6.1.1.2
BRAZING & SOLDERING			See
Set	IC-2	None	3.6.1.2
BRAZING ALLOYS			
copper (Bar)	III		
Strip	III		
Wire	III		
Silver (Strip)	III		
Wire	III		
BRUSH			
Wire	III		PPP-B-566
CABLE ASSEMBLY	I or III	None	
CABLE LUGS	I or III	None	
CAP	I	P-2	
Plastic	III		
CARBON BLOCK	III		
CARBON PASTE	III		
CARBON ROD	III		
CARTRIDGE	III		

MIL-W-45562C

TABLE I. Preservation-packaging and packing of welding and soldering supplies and accessories (continued).

COLUMN 1	COLUMN 2	COLUMN 3	COLUMN 4
CASE			
Carrying	I or III	P-1	See
Gun	I or III	P-1	3.6.1.1.2
CHAMBER			
Precombustion	IC-1	None	MIL-B-117
CHUCK	I	P-1	
CLAMP			
Pipe Aligning	I	P-10	
Ground	I or III	P-1	
CLEANER			
Tip	III		MIL-B-117
CLEANER SET	III		PPP-B-566
CLIP			See
Elec. Soldg. Iron	I or III	P-1	3.6.1.1.2
CONNECTORS (Cable	I or III		
CUTTING ATTACHMENT	IC-1	None	MIL-B-117
CUTTING & BEVELING MACH	II		See
CUTTING MACHINE	II		3.6.1.1.4
CYLINDERS	I or III	P-18	VCI on
Torch Set	I or III	P-18	fitting
DIAPHRAGM			
Regulator, Oxy.	IC-1	None	MIL-B-117
Rubber	IC-1	None	MIL-B-117
Valve	IC-1	None	MIL-B-117
ELECTRODE (Welding)			See MIL-W-10430
Carbon	III		
ELECTROLYTE			See O-S-801
FEEDER, WIRE	IA-15	None or as	See MIL-E-17555
		Necessary	
FLUX SOLDERING			
Granular	III		
Liquid	III		
Paste	III		
Stick	III		
FLUX WELDING			
Powder	III		
Granular	III		
FLUX RECOVERY MACHINE	IA-15	P-1 & P-2	
FURNACE			
Flux Welding	IIa	None	See 3.6.1.1.4
Soldering	IIb	None	See 3.6.1.1.4
Metal Melting	I	P-1 & P-6	See 3.6.1.1.4
GASKET	III		
GLAND			
Hose Connection	III		

MIL-W-45562C

TABLE I. Preservation-packaging and packing of welding and soldering supplies and accessories (continued).

COLUMN 1	COLUMN 2	COLUMN 3	COLUMN 4
GLOVES			
Leather	IC-3	None	
Canvas	IC-3	None	
GOGGLES	III	None	
HAMMER (Welders)	I	P-2	
HANDLE			
Torch	IC-2	None	
Sold. Iron Electric	IA-8	None	
HEAD			
Mixing	IC-1	None	
Soldering	IC-1	None	
Welding	IC-1		
HEATING ELEMENT			
Electric	IA-8	None	
HEAT SINK	III		
HELMET (Welders)	III	None	
HOLDER			
Tool	III	None	
Electrode	III		
Welding Rod	III		
Soldering Iron	I or III	P-1	See 3.6.1.1.2
HOSE			
Oxygen			See MIL-H-775
Acetylene			See MIL-H-775
Air			See MIL-H-775
HOSE ASSEMBLY	IC-2		
IGNITER	IC-1	None	The flint shall be unscrewed (removed) and secured on the hood with PPP-T-60 tape.
INSULATOR BRUCH CLAMP	IC-1	None	
JAWS			
Electrode Holder	III		
KIT (Wire Cleaning)	III		
LEAD ELECTRICAL	IC-1	None	
LEAD SETS			
Soldering & Brazing	IC-2	None	
LENSES			
Goggle	III	None	
Helmet	III	None	
LEVER (Valve Cutting)	I	P-1	
LINER (Conduit)	III		
MACHINE METALIZING			
Fuse Bond Metal Spraying	IIb	None	See 3.6.1.1.4

MIL-W-45562C

TABLE I. Preservation-packaging and packing of welding and soldering supplies and accessories (continued).

COLUMN 1	COLUMN 2	COLUMN 3	COLUMN 4
MANIFOLD			
Gas Cylinder	III		
METALIZING OUTFIT	I	P-18	See 3.6.1.1.8
MITTENS	IC-3	None	
MOISTURE STABILIZER	IC-2	P-1	See 3.6.1.1.2
NIPPLE OUTFIT	III		
NOZZLE	III		
NUT			
Mixing Head	III		
Union	III		
OILER	I	P-10	
PACKING	IC-1	None	
PIPE (Torch Extension)	IC-1	None	
PILOT (Regulator Seat)	IC-1	None	
PIN SET	IC-1	None	
PIN (Valve Lever Crt)	IC-1	None	
PLIERS (Slip Joint)	I	P-2	
PLUG COUPLER	I	P-2	
POSITIONERS	I	P-1 & P-2	See MIL-E-16298 (Alternate method)
POWDER			
Welding	III		
POWER UNIT	IA-15	None	See MIL-E-17555
PUNCH	I	P-2	
RACK			
Welding Rod	I or III	P-1	See 3.6.1.1.2
Cylinder	III		
RECEPTACLE	I or III	None	
REEL (Wire)	I or III	P-1	See 3.6.1.1.2
Hose (Welding)	I or III	P-1 or P-19	See 3.6.1.1.2
REGULATOR (Pressure)	IC-2	None	
REGULATOR FILTER UNIT	IC-2	None	
RESEATING TOOL			
Cutting Tip Torch	I	P-2	
Needle Welding Torch	I	P-2	
Welding Tip Torch	I	P-2	
RETAINER (Seat)	IC-1	None	
RING			
Packing	IC-1	None	
Slip Diaphragm	IC-1	None	
Snap Coupler Plug	IC-1	None	
RODS (Welding)			See MIL-W-10430
SCREEN (Welders)	III	None	

MIL-W-45562C

TABLE I. Preservation-packaging and packing of welding and soldering supplies and accessories (continued).

COLUMN 1	COLUMN 2	COLUMN 3	COLUMN 4
SOLDER			
Bismuth Lead Alloy	III		
Lead Alloy			
Bar	III		
Ingot	III		
Ribbon	III		
Strip	III		
Wire	III		
Lead-Tin Alloy			
Bar	III		
Wire	III		
Tin Alloy			
Bar	III		
Wire	III		
SOLDERING AID			
Circuit Tester	IA-8	None	
SOLDERING & BRAZING OUTFIT	IC-2	None	See 3.6.1.1.8
SOLDERING FORK	IA-15	None	
SOLDERING GUN	IA-15	None	
SOLDERING IRON			
Electric	IA-15	None	
Non-Electric	III	If Needed	
SOLDERING PENCIL	IA-8	None	
SOLDERING PLIERS	IA-15	None	
SWITCH (Foot Control)	IC-2	None	
TABLE (Welding)	I or III	P-1	See 3.6.1.1.2
TIP			
Igniter	IC-1	None	
Blow Torch	III		
Brazing & Soldering	III		
Oxygen Acetylene	IC-1	None	
Cutting	IC-1	None	
Cutting Torch	IC-1	None	
Soldering Gun	IC-1	None	
Soldering Iron, Elec.	IC-1	None	
Soldering Iron, Non-Elec.	III	If Needed	
TIP SET	IC-1	None	
TOOL (Shaft)	I	P-2	
TOOL KIT (Welding)	I	P-18	See 3.6.1.1.8
TOOL SET (Metal Spray)	I	P-18	See 3.6.1.1.8
TORCH (Acetylene)	IC-2	None	
Arc-Oxygen Cutting	IC-2	None	
Cutting	IC-2	None	
Welding	IC-2	None	
TORCH EQUIPMENT	I		See 3.6.1.1.8
TORCH OUTFIT	IC		See 3.6.1.1.8
TORCH SET	IC		See 3.6.1.1.8

MIL-W-45562C

TABLE I. Preservation-packaging and packing of welding and soldering supplies and accessories (continued).

COLUMN 1	COLUMN 2	COLUMN 3	COLUMN 4
TUBE (Mixer)	III		
UNION ATTACHMENT	III		
VALVE			
Acetylene	IC-2	None	
Compensating Reg.	IC-2	None	
Needle T-Handle	IC-1	None	
Oxygen	IC-2	None	
Safety Relief	IC-1	None	
WISE	I or III	P-1	See 3.6.1.1.2
WASHER			
Jack Insulating	IC-1	None	
Back Cap	IC-1	None	
WELDER			
Machine Arc, Selenium Rectifier Type	IIa	None	See 3.6.1.1.4
Spot, portable w/stand and 10 Tongs	I & IIb	P-1 & P-2	See 3.6.1.1.4
WELDING MACHINE, ARC			
Gasoline Engine Driven Skid Mtd. DC Aux. Generator	IIa	None	See 3.6.1.1.4
DC, Power Take-Off Driven	IIa	None	See 3.6.1.1.4
Selenium Rectifier Type Mounted	IIa	None	See 3.6.1.1.4
Gasoline or Diesel Engine Driven, Trailer Mounted	I	P-1, P-2 P-3, P-11 P-19	See MIL-E-16298 (Alternate method) MIL-V-62038 and MIL-E-10062
WELDING MACHINES			
50 Pounds and under	IIb	None	See 3.6.1.1.4
Over 50 Pounds	IIa	None	See 3.6.1.1.4
WELD PREHEAT SYSTEM	II	None	See 3.6.1.1.4

MIL-W-45562C

Custodians:

Army - AL
Navy - SH
Air Force - 99

Preparing Activity:

Army - AL

Project No. PACK-0925

Review Activities:

Army - SM
Navy - SH, YD
Air Force - None
DSA - IP