

INCH-POUND

MIL-DTL-83507A
w/AMENDMENT 1
25 July 2025
SUPERSEDING
MIL-DTL-83507A
8 August 2017

DETAIL SPECIFICATION

TOOL KITS, ELECTRICAL CONNECTORS, CONTACTS, AND CONNECTOR AND CABLE ACCESSORIES, GENERAL SPECIFICATION FOR

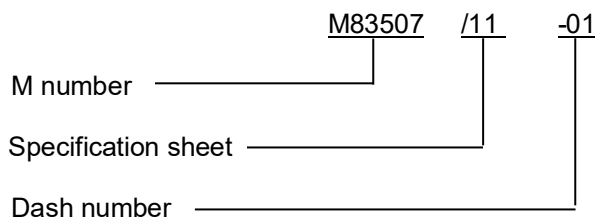
Inactive for new design after 8 August 2017.

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

1. SCOPE

1.1 Scope. This specification covers the general requirements for tool kits used for repair and maintenance of electrical connectors, contacts, and connector and cable accessories (see 6.1).

1.1.1 Part or Identifying Number. The following is an example of the Part or Identifying Number (PIN) (See 3.1):



Additional PIN examples:

- M83507/11-01 – Tool kit for MIL-C-22520/1 crimping tool and turrets.
- M83507/11-02 - Tool kit case assembly.
- M83507/17-01 – Tool kit for MIL-C-22520/2 crimping tool and positioners.
- M83507/17-02 - Tool case assembly.

Comments, suggestions, or questions on this document should be addressed to DLA Land and Maritime-VAI, P.O. Box 3990, Columbus OH 43218-3990 or emailed to CircularConnector@dla.mil. Since contact information can change, you may want to verify the currency of this address information using the ASSIST Online database at <https://assist.dla.mil>.



2. APPLICABLE DOCUMENTS

2.1 General. The documents listed in this section are specified in sections 3 and 4 of this specification. This section does not include documents cited in other sections of this specification or recommended for addition information or as examples. While every effort has been made to ensure the completeness of this list, document users are cautioned that they must meet all specified requirements documents cited in sections 3 and 4 of this specification, whether or not they are listed.

2.2 Government documents.

2.2.1 Specifications, standards, and handbooks. The following specifications, standards, and handbooks form a part of this document to the extent specified herein. Unless otherwise specified, the issues of these documents are those cited in the solicitation or contract.

FEDERAL SPECIFICATIONS

MMM-A-121	-	Adhesive, Bonding Vulcanized Synthetic Rubber to Steel.
MMM-A-132	-	Adhesive, Heat Resistant, Airframe Structural, Metal to Metal.
MMM-A-134	-	Adhesive, Epoxy Resin, Metal to Metal, Structural Bonding.

COMMERCIAL ITEM DESCRIPTIONS

A-A-1936	-	Adhesives, Contact, Neoprene Rubber.
A-A-59135	-	Packaging Material, Sheet.
A-A-59136	-	Cushioning Material, Packaging, Closed Cell Foam Plank.

DEPARTMENT OF DEFENSE SPECIFICATIONS

MIL-DTL-19834	-	Plates, Identification or Instruction, Metal Foil, Adhesive Backed, General Specification for.
MIL-F-81334	-	Foam, Plastic, Flexible, Open Cell, Polyester Type Polyurethane.

DEPARTMENT OF DEFENSE STANDARDS

MIL-STD-108	-	Definitions of and Basic Requirements for Enclosures for Electric and Electronic Equipment.
MIL-STD-130	-	Identification Marking of US Military Property.
MIL-STD-202	-	Electronic and Electrical Component Parts.
MIL-STD-202-103	-	Method 103, Humidity (Steady State).
MIL-STD-202-101	-	Method 101, Salt Atmosphere (Corrosion).
MIL-STD-202-213	-	Method 213, Shock (Specified Pulse).
MIL-STD-810	-	Environmental Engineering Considerations and Laboratory Tests.
MIL-STD-889	-	Galvanic Compatibility of Electrically Conductive Materials.

(See supplement 1 for list of specification sheets.)

(Copies of these documents are available online at <http://quicksearch.dla.mil>.)

2.3 Non-Government publications. The following documents form a part of this document to the extent specified herein. Unless otherwise specified, the issues of these documents are those cited in the solicitation or contract.

NCSL INTERNATIONAL

NCSL Z540.3 - Requirements for the Calibration of Measuring and Test Equipment.

(Copies of this document are available online at <http://www.ncsli.org>.)

SAE INTERNATIONAL

SAE-AMS-STD-595 - Colors used in Government Procurement.
SAE-AS22520 - Crimping Tools, Wire Termination, General Specification For
SAE-AS81969 - Installing and Removal Tools, Connector Electrical Contact, General Specification for.

(Copies of these documents are available online at <http://www.sae.org>.)

2.4 Order of precedence. Unless otherwise noted herein or in the contract, in the event of a conflict between the text of this document and the references cited herein (except for related specification sheets), the text of this document takes precedence. Nothing in this document, however, supersedes applicable laws and regulations unless a specific exemption has been obtained.

3. REQUIREMENTS

3.1 Specification sheets. The individual item requirements shall be as specified herein and in accordance with the applicable specification sheet. In the event of any conflict between the requirements of this specification and the specification sheet, the latter shall govern.

3.2 Qualification. Tool kits and contents therein furnished under this specification shall be products which are qualified for listing on the applicable qualified products list at the time set for opening of bids (see 4.5 and 6.3).

3.3 Materials. Materials shall be as specified herein. However, when a definite material is not specified, a material shall be used which will enable the tool kits to meet the performance requirements of this specification and the applicable specification sheet. Acceptance or approval of any constituent material shall not be construed as a guaranty of the acceptance of the finished product.

3.3.1 Cases. Unless otherwise specified (see 3.1), the three categories of cases shall be as follows:

3.3.1.1 Category 1 (inactive for new design) (see 6.4). Ruggedized case. Category 1 is non-procureable.

3.3.1.2 Category 2 (inactive for new design) (see 6.4). Environmental case shall meet the following requirements of MIL-STD-810; methods 500 (low pressure, altitude), 501, procedure II (high temperature), 502 (low temperature), 505, procedure II (solar radiation (sunshine)), 506 (rain), 507, procedure II (humidity), 508 (fungus), 509 (salt fog), 510 (dust (fine sand)), 512, procedure I (leakage, immersion), 514, procedure III (vibration), 516, procedure II (shock), except drop shall be on top and bottom only, unless otherwise specified.

3.3.1.3 Category 3. Nonenvironmental case shall meet the best commercial practice (see 3.1).

3.3.2 Adhesives. Unless otherwise specified (see 3.1), adhesive shall be in accordance with MMM-A-121, MMM-A-132, MMM-A-134, or A-A-1936.

3.3.3 Cushioning material. Unless otherwise specified (see 3.1), cushioning material shall be in accordance with A-A-59135, A-A-59136 or MIL-F-81334.

3.3.4 Dissimilar metals and compatible couples. When dissimilar metals are employed in intimate contact with each other, protection against electrolytic corrosion / galvanic corrosion shall be as provided. The use of dissimilar metals in contact, which tend toward active galvanic corrosion (particularly brass, copper, or steel used in contact with aluminum or aluminum alloy) is not acceptable. However, metal plating of dissimilar-base metals to provide similar or suitable abutting surfaces is permitted. The use of dissimilar metals separated by a suitable insulating material is also permitted. Dissimilar metals and compatible couples are defined in MIL-STD-889.

3.4 Design and construction. Tool kits shall be of the design, construction, and physical dimensions specified (see 3.1).

3.4.1. Cases. Cases, metal, fiberglass, or plastic shall be designed as specified (see 3.1).

3.4.2 Color. The tool kit color shall be in accordance with SAE-AMS-STD-595 (for color, see 3.1).

3.4.3 Installing and removal tools. Unless otherwise specified (see 3.1), all installing and removal tools shall be in accordance with SAE-AS81969 or approved equivalent.

3.4.4 Crimping tools, dies, turret, positioners, and gages. Unless otherwise specified (see 3.1), all crimping tools, dies, turrets, positioners, and gages shall be in accordance with MIL-DTL-22520 or approved equivalent.

3.5 Case, waterproof (fiberglass and plastic only) (when specified, see 3.1). When the case is tested as specified in 4.7.2, there shall be no evidence of water/ moisture accumulation inside the case.

3.6 Humidity (steady state). When the tool kit with contents is tested as specified in 4.7.3, there shall be no damage to any tools contained in the tool kit (see 3.1).

3.7 Salt spray (corrosion). When the tool kit with contents is tested as specified in 4.7.4, there shall be no evidence of corrosion that could impair the operation of the tools.

3.8 Shock (when specified, see 3.1). When the tool kit with contents is tested as specified in 4.7.5, there shall be no damage to either the case or the tools.

3.9 Marking. All marking shall be in accordance with MIL-STD-130 and shall be permanent and legible.

3.9.1 Nameplates. Nameplates or tool cases shall be marked with information as specified (see 3.1). The plates shall be .003 to .005 inch thick aluminum foil in accordance with MIL-DTL-19834 and shall be permanently mounted. Marking shall be black on a light background.

3.9.2 Content charts and instruction sheets. Content charts and instruction sheets shall be white vinyl .020 inch thick or approved equivalent with black lettering. The lettering shall be protected with a transparent coating (see 3.1).

3.10 Workmanship. The tool cases and tools contained therein shall have no sharp edges, burrs, or other features which are potential personal hazards to the operator during normal usage.

4. VERIFICATION

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

4.1.1 Test equipment and inspection facilities. Test and measuring equipment and inspection facilities shall be established and maintained by the contractor. The establishment and maintenance of a calibration system to control the accuracy of the measuring and test equipment shall be in accordance NCSL Z540.3, or equivalent system.

4.2 Classification of inspections. The inspection of the tool kit requirements specified herein are classified as follows:

- a. Materials inspection (see 4.3)
- b. Qualification inspection (see 4.4).
- c. Conformance inspection (see 4.5).

4.3 Materials inspection. Materials inspection shall consist of certification supported by verifying data that the materials, as specified herein and on the specification sheet (see 3.1), used in fabricating the tools kits, are in accordance with the applicable referenced specifications or requirements prior to such fabrication.

4.4 Inspection conditions. Unless otherwise specified herein, all inspections shall be performed in accordance with the test conditions specified in the "GENERAL REQUIREMENTS" of MIL-STD-202.

4.5 Qualification inspection. Qualification inspection shall be performed at a laboratory acceptable to the Government (see 6.3) on a sample unit produced with equipment and procedures normally used in production.

4.5.1 Sample size. One tool kit with contents shall be subjected to qualification.

4.5.2 Inspection routine. The qualification sample consisting of one tool kit with contents shall be subjected to qualification inspection.

TABLE I. Qualification inspection.

Inspection	Requirement paragraph	Test method paragraph
Visual and mechanical inspection	3.1, 3.3, 3.4, 3.9 and 3.10	4.7.1
Nonmagnetic materials	3.5	4.7.2
Temperature cycling	3.6	4.7.3
Air leakage	3.7	4.7.4
Coupling torque	3.8	4.7.5

4.5.3 Failures. One failure shall be cause for refusal to grant qualification.

4.5.4 Retention of qualification. To retain qualification, the manufacturer shall forward a report to the Qualifying Activity (see 6.3) as follows:

- a. At 24 month intervals, unless otherwise specified by the Qualifying Activity, the qualified manufacturer shall forward a report with a summary of the results of group A testing (see 4.6.1). The results of tests of all reworked lots shall be identified and accounted for.

Reports shall include certification that the qualified source continues to produce qualified product under the same conditions as originally qualified (i.e., same processes, materials, design, construction, etc., including manufacturing locations), unless such changes have been authorized by the Qualifying Activity.

Note: The Qualifying Activity establishes the initial reporting date. The qualified source shall immediately notify the Qualifying Activity at any time during the reporting period when inspection data indicates failure of the qualified product to meet the requirements of the specification. If the summary of test results indicates nonconformance with the specification requirements, and corrective action acceptable to the Qualifying Activity has not been taken, then action may be taken to remove failing product from the QPL. In addition, failure to submit the report within thirty days after the end of each reporting period may result in loss of qualification for that product. In the event that no production occurred during the reporting period, the qualified manufacturer shall submit a report certifying that the company still has the capability and facilities required to produce the qualified product. If there has been no production during two consecutive reporting periods, the Qualifying Activity, at its discretion, may require the manufacturer submit a representative product of each type, class, etc., to retention testing in accordance with qualification inspection requirements.

4.6 Conformance inspection.

4.6.1 Group A inspection. Group A inspection shall consist of the examination specified in table II, in the order shown.

TABLE II. Group A inspection.

Inspection	Requirement paragraph	Test paragraph
Visual and mechanical examination:		
Material	3.1, 3.3	4.7.1
Finish	3.1, 3.3	4.7.1
Marking	3.9	4.7.1
Workmanship	3.10	4.7.1

4.6.1.1 Inspection lot. An inspection lot shall consist of all tool kits covered by a single specification sheet, produced under essentially the same conditions, and offered for inspection at one time.

4.6.1.2 Visual and mechanical examination (group A inspection). Each test kit shall be visually examined for completeness, workmanship, and identification requirements, with special attention to material and finish.

4.6.1.3 Sampling plan (group A inspection). A sample shall be randomly selected from the inspection lot. The sample size shall be in accordance with table III. If one or more defects are found, the contractor may rework the entire inspection lot to correct the defects, or the entire lot shall be rescreened and defects removed, then resubmitted for inspection. The new sample lot shall be clearly identified as a reinspected lot. A new sample lot shall be randomly selected in accordance with the sampling plan specified in table III, and the rescreened /reworked lot shall be inspected in accordance with table II. If one or more defects are found in the rescreened/reworked lot, the lot shall be rejected and shall not be supplied to this specification.

TABLE III. Sampling plan.

Lot size	Sample size
1 to 13	100 percent
14 to 150	13 units
151 to 280	20 units
281 to 500	29 units
501 to 1,200	34 units
1,201 to 3,200	42 units

4.6.1.4 Disposition of group A sample. The tool kit which has passed group A inspection may be delivered on the contract or purchase order if the lot is accepted and the sample unit is still within specified tolerances.

4.6.1.5 Noncompliance. If a sample fails to pass group A periodic inspection, the manufacturer shall notify the qualifying activity and the cognizant inspection activity of such failure and take corrective action on the materials or processes, or both, as warranted, and on all units of product which can be corrected and which were manufactured with essentially the same materials and processes, and which are considered subject to the same failure. Acceptance and shipment to the product shall be discontinued until corrective action, acceptable to the qualifying activity has been taken. After the corrective action has been taken, group A inspection shall be repeated on additional sample units (all tests and examinations, or the test which the original sample failed, at the option of the qualifying activity). Group A inspection may be reinstituted; however, final acceptance and shipment shall be withheld until the group A inspection has shown that the corrective action was successful. In the event of a failure after reinspection, information concerning the failure shall be furnished to the cognizant inspection activity and the qualifying activity.

4.7 Methods of examination and test.

4.7.1 Visual and mechanical examination. The tool kit and contents shall be examined to verify that the design, construction, physical dimensions, markings, and workmanship are in accordance with applicable requirements (see 3.1, 3.3, 3.4, 3.9, and 3.10).

4.7.2 Case waterproof (fiberglass only) (when specified, see 3.5). Fiberglass cases shall be tested in accordance with the submergence test requirements of MIL-STD-108, watertight enclosure (3 ft depth and 1 hr duration).

MIL-DTL-83507A
w/AMENDMENT 1

4.7.3 Humidity (steady state) (see 3.6). The tool kit and contents shall be tested in accordance with MIL-STD-202-103, test condition B (96 hr duration).

4.7.4 Salt atmosphere (corrosion) (see 3.7). The tool kit and contents shall be tested in accordance with of MIL-STD-202-101, test condition B (48 hr duration).

4.7.5 Shock (specified pulse) (when specified, see 3.1) (see 3.8). The tool kit and contents shall be tested in accordance with of MIL-STD-202-213, test condition I (100 g peak, sawtooth waveform).

5. PACKAGING

5.1 Packaging. For acquisition purposes, the packaging requirements shall be as specified in the contract or order (see 6.2). When packaging of materiel is to be performed by DoD or in-house contractor personnel, these personnel need to contact the responsible packaging activity to ascertain packaging requirements. Packaging requirements are maintained by the Inventory Control Point's packaging activities within the Military Service or Defense Agency, or within the military service's system commands. Packaging data retrieval is available from the managing Military Department's or Defense Agency's automated packaging files, CD-ROM products, or by contacting the responsible packaging activity.

6. NOTES

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

6.1 Intended use. Tool kits and contents therein covered by this specification are intended to be used for repair and maintenance of electrical connectors, contacts, and connector and cable accessories, and other electric and electronic equipment as specified in MIL-HDBK-1646.

6.2 Acquisition requirements. Acquisition documents should specify the following:

- a. Title, number, and date of this specification and applicable specification sheet.
- b. Military part numbers for tool kits as required (see 3.1).
- c. Quantity of tool kits desired.

6.3 Qualification. With respect to products requiring qualification, awards will be made only for products which are, at the time of award of contract, qualified for inclusion in Qualified Product List QPL No. 83507 whether or not such products have actually been so listed by that date. The attention of the contractors is called to these requirements, and manufacturers are urged to arrange to have the products that they propose to offer to the Federal Government tested for qualification in order that they may be eligible to be awarded contracts or orders for the products covered by this specification. Information pertaining to qualification of products may be obtained from the Defense Supply Center Columbus, ATTN: DLA Land and Maritime-VQ, 3990 East Broad Street, Columbus, Ohio 43218-3990. An online listing of products qualified to this specification may be found in the Qualified Products Database (QPD) at <https://assist.dla.mil>.

6.3.1 Copies of SD-6, "Provisions Governing Qualification". Copies of "Provisions Governing Qualification" may be found at <https://assist.dla.mil>.

6.4 Application notes: Category 1 is not to be used for procurement, as the cited test requirement document for category 1 cases has been cancelled. All categories are inactive for new design. As of the date of the current revision, no NSNs for categories 1 and 2 have previously entered the supply chain, rendering these categories non-procureable. The categories remain in the body of the document for

MIL-DTL-83507A
w/AMENDMENT 1

information only. An active NSN is available for MIL-T-83507/7, however the document has been cancelled and superseded by MIL-M-83521/6.

6.5 Subject term (key word) listing.

Crimping tool
Die
Environmental
Gage
Maintenance
Nonenvironmental
Positioner
Turret

6.6 Environmentally preferable material. Environmentally preferable materials should be used to the maximum extent possible to meet the requirements of this specification.

6.7 Guidance on use of alternative parts with less hazardous or nonhazardous materials. Users should select the PIN with the least hazardous material that meets the form, fit and function requirements of their application.

6.8 Military unique statement. Tool kits qualified to this specification are military unique because they are intended for use with electrical connectors and electrical connector accessories supplied in accordance with military specifications.

6.9 Amendment notations. The margins of this specification are marked with vertical lines to indicate modifications generated by this amendment. This was done as a convenience only and the Government assumes no liability whatsoever for any inaccuracies in these notations. Bidders and contractors are cautioned to evaluate the requirements of this document based on the entire content irrespective of the marginal notations.

CONCLUDING MATERIAL

Custodians:

Army - CR
Navy - AS
Air Force – 85
DLA - CC

Preparing activity:

DLA - CC

(Project 5180-2025-001)

Review activities:

Army – AR, AT, AV, GL, MI
Navy – EC, MC
Air Force – 19
DLA - GS

NOTE: The activities listed above were interested in this document as of the date of this document. Since organizations and responsibilities can change, you should verify the currency of the information above using the ASSIST Online database at <https://assist.dla.mil>.