INCH-POUND
MIL-C-39012C
AMENDMENT 3
5 December 1988
SUPERSEDING
AMENDMENT 2
26 February 1986

MILITARY SPECIFICATION

CONNECTORS, COAXIAL, RADIO FREQUENCY,
GENERAL SPECIFICATION FOR

This amendment forms a part of MIL-C-39012, dated 11 August 1982, and is approved for use by all Departments and Agencies of the Department of Defense.

PAGE 1

1.2.2b, delete and substitute:

"b. Category B - Connectors which require special tools to assemble shall be designated as category B connectors. These connectors may be used for original installations only. Field replacement is intended to be made by categories A, C, D, E, or F connectors which shall provide the same form, fit and function. Category B connectors will not be stocked or procured by the government."

1.2.2e, Category E, add the following sentence to the end of the definition: "The method of assembly of the connector to the cable outer conductor shall be by solder."

Add the following new paragraph to 1.2.2;

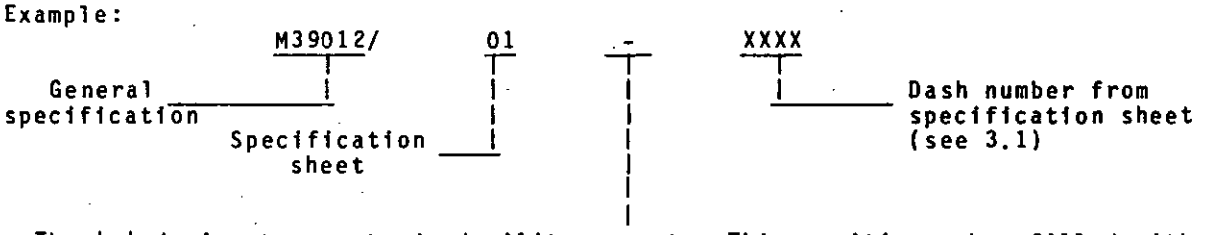
"f. Category F. - Connectors using semirigid cables with standard stripping dimensions and using standard military assembly tools. The method of assembly of the connector to the cable shall be solderless."

PAGE 2

* 1.2.3, delete and substitute:

"1.2.3 Part number. The part number shall consist of the letter 'M' followed by the basic specification sheet number, and a sequentially assigned four digit dash number. The first digit in the dash number designates the material of the connector body (shell); i.e., '0' for brass, '3' for corrosion-resistant steel; and '4' for copper beryllium.

Example:



The '-' designates a standard military part. This position, when filled with the letter 'B' (i.e. M39012/01BXXXX), signifies a military part which is for OEM use only. The part is assembled to the cable with special tooling. Acquisition of this type part by any agency other than OEM's is prohibited and will result in the substitution of the equivalent military replacement part (i.e., if 'M39012/01BXXXX' is submitted for acquisition, 'M39012/01-XXXX' will be recommended)."

2.1, delete the following:

* "L-P-403 - Plastic Molding Material, Polytetrafluoroethylene (TFE-Fluorocarbon).
* QQ-A-225/6 - Aluminum Alloy Bar, Rod, and Wire; Rolled, Drawn or Cold Finished, 2024."

* 2.1, add the following:

"QQ-N-290 - Nickel Plating (Electrodeposited).
QQ-S-365 - Silver Plating, Electrodeposited, General Requirements For.
MS-20995 - Wire, Safety or Lock.
MIL-C-14550 - Copper Plating, (Electrodeposited)."

2.1: For MIL-C-55330, title should read "Connectors, Electrical and Fiber Optic, Packaging of."

PAGE 3

* 2.1, add the following:

"FED-STD-H28 - Screw Thread Standards for Federal Services."

"MIL-STD-348 - Radio Frequency Connector Interfaces."

"MIL-STD-1344 - Test Methods for Electrical Connectors."

* 2.2, add the following:

"ASTM-D-1457 - Materials, PTFE, Molding and Extrusion."

3.2, line 3, add: "Permission to grant qualification testing on category 'B' connectors shall only be granted when a non-category 'B' connector is available on the latest issue of the Qualified Products List."

PAGE 4

TABLE I: Delete "Aluminum" and "QQ-A-225/6".

3.3.1, delete and substitute:

"3.3.1 Finish. Unless otherwise specified (see 3.1), connector center contacts and bodies shall be plated in the following manner."

* 3.3.1.1, delete and substitute:

"3.3.1.1 Center contacts. Center contacts shall be gold plated to a minimum thickness of 0.000100 inch, in accordance with MIL-G-45204, type II, class 2 over a 0.000100 inch minimum copper plate in accordance with MIL-C-14550, class 4 or gold plated to a minimum thickness of 0.000050 inch over a 0.000050 inch, minimum nickel underplate in accordance with QQ-N-290, class 1. A silver underplate shall not be permitted. Only corrosion-resistant steel bodied connectors and hermetically sealed connectors may use nickel underplate on the center contacts."

* 3.3.1.2, delete and substitute:

"3.3.1.2 Connector bodies. All brass bodied connectors shall be silver plated in accordance with QQ-S-365 to a minimum thickness of 0.000200 inch over a copper underplate. All copper beryllium bodied connectors shall be gold plated in accordance with MIL-G-45204, type II, class 1 over a copper flash. All corrosion resistant steel bodied connectors shall be passivated in accordance with MIL-F-14072, unless otherwise specified (see 3.1). NOTE: Ferrous or nickel alloys shall not be used on brass or copper beryllium bodied connectors (i.e., coupling nuts, etc.)."

* 3.3.1.2.1, delete.

* Add 3.3.1.3, as follows:

"3.3.1.3 Delivery from stock. Qualified manufacturers and their selling agents or distributors may ship from stock, connectors which were qualified to the preceeding issue of MIL-C-39012 for a period of 18 months from the date of this specification amendment, unless otherwise specified (see 3.1)."

* After 3.4.1, add the following new paragraphs:

"3.4.2 Screw threads. Screw threads shall be in accordance with FED-STD-H28 unless otherwise specified (see 3.1).

"3.4.3 Connector interfaces. Connector interfaces shall be in accordance with MIL-STD-348 unless otherwise specified (see 3.1)."

* 3.24, add the following sentence: "The direct clamping of the cable jacket shall not be the primary method of cable retention."

* 3.28, add the following after the first sentence: "It is not the intention of this specification to require assembly instructions with uncabled connectors. (i.e., solder pot, solder tab or posts, etc.)."

* Delete and substitute:

"3.29 Marking. Connectors and associated fittings shall be permanently and legibly marked in accordance with the general marking requirements of MIL-STD-130 with the military part number (see 1.2.3), manufacturer's federal supply code, and final assembly date code. The marking location is optional; when practicable, a location should be picked that will least likely be covered in cable assembly or installation.

Add 3.31, as follows:

"3.31 Manufacturers' control drawing. Connector manufacturers shall insure that special tooling and dies are documented. The replacement category A, C, D, E, or F part numbers shall be listed on the manufacturers' control drawing."

* Add 3.32, as follows:

"3.32 Safety wire hole pull out. When applicable (see 3.1), connectors are to be tested as specified in 4.6.25. There shall be no evidence of hole tear out."

PAGE 7

4.4.2, add the following sentence between the two existing sentences. "Group qualification will be limited to those connectors for which evidence of manufacturing capability is demonstrated by providing engineering drawings to the qualifying agency."

* 4.4.5, delete and substitute:

"4.4.5 Retention of qualification. To retain qualification, the contractor shall forward a report at 12- or 36-month intervals, as indicated below, to the qualifying activity. The qualifying activity shall establish the initial reporting date. The report shall consist of:

a. A summary of the results of the tests performed for inspection of product for delivery. Groups A and B shall be submitted every 12 months indicating, as a minimum, the number of lots that have passed and the number that have failed. The results of tests of all reworked lots shall be identified and accounted for.

b. A summary of the results of tests performed for qualification verification inspection, group C, shall be submitted every 36 months including the number and mode of failures. The summary shall include results of all qualification verification inspection tests performed and completed during the 36-month period. If the summary of the test results indicates nonconformance with specification requirements, and corrective action acceptable to the qualifying activity has not been taken, action may be taken to remove the failing product from the qualified products list.

Failure to submit the report within 30 days after the end of each 12- or 36-month period may result in loss of qualification for the product. In addition to the periodic submission of inspection data, the contractor shall immediately notify the qualifying activity at any time during the 12- or 36-month period that the inspection data indicates failure of the qualified product to meet the requirements of this specification.

In the event that no production occurred during the reporting period, a report shall be submitted certifying that the company still has the capabilities and facilities necessary to produce the item. If during three consecutive reporting periods there has been no production, the manufacturer may be required, at the discretion of the qualifying activity, to submit the connector to testing in accordance with the qualification inspection requirements."

PAGE 8

* TABLE II, add the following to group III after connector durability:

"Safety wire hole pull out	3.32	4.6.25"

PAGE 10

TABLE IV, following "Voltage standing wave ratio (uncabled)", add "1/". Following table IV, add "1/ Destructive test."

PAGE 11

* TABLE V, add the following to subgroup 2 after connector durability:

"Safety wire hole pull out	3.32	4.6.25"

PAGE 12

4.6.6, item b: Delete "III" and substitute "I".

PAGE 19

* 4.6.21, delete and substitute:

"4.6.21 Cable retention force (see 3.24). When specified (see 3.1), the connector shall be assembled to its standard mating test cable. The connector shall be firmly fixed and a movable sleeve attached to the cable. The sleeve is then moved longitudinally away from the fixed connector gradually and in such a manner that the cable remains unbent and untwisted. A scale for measuring the retention force (see 3.1) shall be attached to the sleeve. The force shall be held for 30 seconds minimum. The assembly shall then be examined for mechanical failure, loosening, or rupture and tested for continuity using a suitable test method. When specified (see 3.1), a torque shall be applied to the cable about its axis in each direction relative to the connector at the location and to the torque value given on the detail specification sheet. The cable (flexible types only) shall then be bent at a radius of 10 times the diameter of the cable starting at the connectors at an angle of 90° ±5° from the axis of the connector, then reversed 180° ±10°. Repeat this procedure four times, then retest and reexamine as outlined above."

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* Add 4.6.25 as follows:

"4.6.25 Safety wire hole pullout (see 3.32). A single strand of safety wire shall be looped through the safety wire hole and secured to itself. Forces of 15 pounds (67 newtons) minimum shall be applied to the safety wire pulling away from the connector. One pull shall be parallel to the connector axis and one pull perpendicular to the connector axis (see figure 6). The safety wire shall be corrosion resistant steel .020 inch diameter (24 gauge) or .015 inch diameter, (27 gauge) in accordance with MS20995. This test is to be conducted under static conditions. All holes are to be tested individually."

* Add figure 6 as follows:

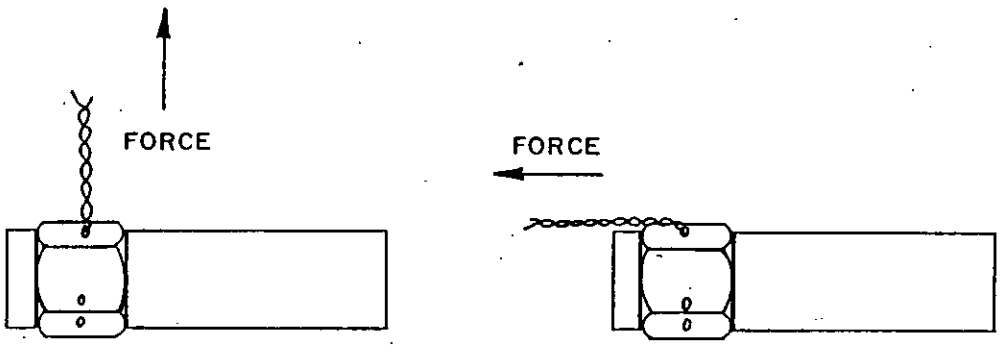

FIGURE 6. Safety wire hole pullout procedure.

6.2, items d and e: Delete.

PAGE 26

Add 6.6.2 as follows:

"6.6.2 Installation of category 'B' connectors. Field replaceable connectors for category 'B' shall be those specified on the latest issue of the Qualified Products List and shall be adequate as a replacement without rework of the connector. The equipment parts list shall indicate the appropriate connector that will be used for the service replacement of a category 'B' connector."

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* Delete figures 8 through 10. Reference MIL-STD-348 for test connector dimensions.

The margins of this amendment are marked with asterisks to indicate where changes from the previous amendment were made. 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 and relationship to the last previous amendment.

CONCLUDING MATERIAL

Custodians:
Army - CR
Navy - EC
Air Force - 85

Review activities:
Army - AR, MI
Navy - OS
Air Force - 11, 99
DLA - ES

User activities:
Army - AT
Navy - AS, MC, SH
Air Force - 19

Preparing activity:
Army - CR

Agent:
DLA - ES

(Project 5935-3598)