

MLCPAC STANDARD SPECIFICATION 304.2
SHIPBOARD ELECTRICAL CABLE REMOVAL, RELOCATION, SPLICE, REPAIR, AND INSTALLATION

1 SCOPE

1.1 This specification provides guidance and requirements for shipboard electrical cables removal, relocation, splice, repair, and installation.

2 REFERENCES

Coast Guard Drawings: None

Enclosed Figures: None

Applicable Documents:

MLCPAC Standard Specification 304.1; Shipboard Electric Cable Test (Mar 98)
COMDTINST M10360.3A; Coatings and Color Manual (Aug 95)
DOD-STD-2003, Notice 1; Electric Plant Installation Standard Methods for Surface Ships and Submarines
MIL-STD-1310G; Shipboard Bonding, Grounding and Other Techniques for Electromagnetic Compatibility

3 REQUIREMENTS

3.1 **REMOVAL:** Isolate and remove each cable designated for removal, renewal or replacement by the Specification Item.

3.1.1 Remove each cable in its entirety.

3.1.1.1 Blank each bulkhead, deck penetration and multi-cable transit device from which cable was removed and which will not be reused, in accordance with Section 3 of DOD-STD-2003.

3.1.1.2 Blank each hole not required to be used in equipment from which cable was removed.

3.1.1.3 Remove unused hangers from which cable was removed and which will not be reused, and grind areas flush in way of removals.

3.1.1.4 Install new banding for cableways affected by cable removals in accordance with Section 4 of DOD-STD-2003.

3.2 **RELOCATION:** Isolate each cable to be pulled back, rerouted, relocated, or reused due to work required by the Specification Item.

3.2.1 Inspect each cable end to be disconnected for correct identification sleeving, including size, type, and legible lettering in accordance with reference drawings. Ensure lugs are secured to leads and are of correct size and type, and the insulation is not damaged.

3.2.1.1 Submit a report listing results of the requirements of 3.2.1 to the Coast Guard Inspector.

3.2.2 Disconnect each cable. Record and retain electrical hookup data.

3.2.2.1 Accomplish the cable test requirements of MLC Std Spec 304.1 for disconnected cables.

3.2.3 Remove each cable from equipment and pull back to predetermined locations. Coil each cable and secure to prevent damage.

3.2.4 Reinstall each cable to equipment or component in accordance with DOD-STD-2003.

3.2.5 Band disturbed cable in accordance with Section 4 of DOD-STD-2003.

3.2.6 Bond and ground each cable in accordance with MIL STD-1310.

3.2.7 Accomplish the cable test requirements of MLC Std Spec 304.1 upon completion of banding and prior to reconnecting.

3.2.8 Reconnect each cable, using reference drawings or retained hookup data.

3.2.9 Prepare each cable end and serve the lead bundles in accordance with Section 1 of DOD-STD-2003.

3.2.10 Install new cable identification tags in accordance with Section 1 of DOD-STD-2003. Tags and strips for marking cables shall be of soft aluminum tape, MIL-A-2877, having a natural finish, except where used with cables having bronze armor, in which cases sheet brass of commercial quality shall be used.

3.3 SPLICING: Isolate and splice cables in accordance with Section 1 of DOD-STD-2003 to support work required by the Specification Item.

3.3.1 Accomplish the cable test requirements of MLC Std Spec 304.1 for each spliced cable.

3.3.2 Band disturbed cable in accordance with Section 4 of DOD-STD-2003.

3.3.3 Bond and ground each cable in accordance with MIL STD-1310.

3.3.4 Accomplish the cable test requirements of MLC Std Spec 304.1 upon completion of banding and prior to reconnecting.

3.3.5 Reconnect each cable, using reference drawings or retained hookup data.

3.3.6 Prepare each cable end and serve the lead bundles in accordance with Section 1 of DOD-STD-2003.

3.3.7 Install new cable identification tags in accordance with Section 1 of DOD-STD-2003. Tags and strips for marking cables shall be of soft aluminum tape, MIL-A-2877, having a natural finish, except where used with cables having bronze armor, in which cases sheet brass of commercial quality shall be used.

3.4 REPAIR: Isolate and repair cables in accordance with Section 1 of DOD-STD-2003 to support work required by the Specification Item.

3.4.1 Accomplish the cable test requirements of MLC Std Spec 304.1 for each repaired cable.

3.4.2 Band disturbed cable in accordance with Section 4 of DOD-STD-2003.

3.4.3 Bond and ground each cable in accordance with MIL STD-1310.

3.4.4 Accomplish the cable test requirements of MLC Std Spec 304.1 upon completion of banding and prior to reconnecting.

3.4.5 Reconnect each cable, using referenced drawings or retained hookup data.

3.4.6 Prepare each cable end and serve the lead bundle in accordance with Section 1 of DOD-STD-2003.

3.4.7 Install new cable identification tags in accordance with Section 1 of DOD-STD-2003. Tags and strips for marking cables shall be of soft aluminum tape, MIL-A-2877, having a natural finish, except where used with cables having bronze armor, in which cases sheet brass of commercial quality shall be used.

3.5 INSTALLATION: Install each new cable, cableway, penetration in accordance with DOD-STD-2003, MIL STD-1310, and referenced drawings to support work required by the Specification Item.

3.5.1 New cable shall conform to MILC-24643 (low smoke cables).

3.5.2 Utilize existing cableways and penetrations wherever possible. Penetrations shall be correct size in accordance with Section 3 of DOD-STD-2003.

3.5.3 For hard-wired cables, install new wire markers conforming to MIL-I-23053, Class 1, white, marked with indelible ink.

3.5.3.1 Mark in accordance with referenced drawings and/or equipment technical manual.

3.5.3.2 Install new lugs of correct size and shape conforming to MIL-T-16366 or MIL-T-7928. Do not cut off strands of copper to reduce size of lead to fit lug. Use correct barrel and hole size.

3.5.4 Install new cable identification tags in accordance with Section 1 of DOD-STD-2003. Tags and strips for marking cables shall be of soft aluminum tape, MIL-A-2877, having a natural finish, except where used with cables having bronze armor, in which cases sheet brass of commercial quality shall be used.

3.5.5 Accomplish the cable test requirements of MLC Std Spec 304.1 upon completion of lugging, connector attachment and banding.

3.5.6 Connect leads to terminal boards and connectors to equipment using referenced drawings.

3.6 GENERAL: Inspect existing cableways affected as a result of work required by the individual Specification Items. Ensure that cableways, penetrations, hangers and associated hardware are suitable for use and are in accordance with DOD-STD-2003.

3.6.1 Submit a report listing cableways, penetrations, hangers and associated hardware not in compliance with DOD-STD-2003 to the Coast Guard Inspector.

3.7 Install new fasteners conforming to MILS-1222, Type 1, Grade 304, stainless steel for areas exposed to weather and high moisture areas, and Type 1, Grade 2 or 5, carbon steel, zinc plated for other areas due to work required by the Specification Item.

3.8 Accomplish the requirements of COMDTINST M10360.3 for new and disturbed surfaces.