



DEFENSE LOGISTICS AGENCY
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DLA LAND AND MARITIME-VAI

DATED

MEMORANDUM FOR MILITARY/INDUSTRY DISTRIBUTION

SUBJECT: Dated Engineering Practice Study

The Finding and Recommendations on Engineering Practice Studies, dated January 23, 2019 are enclosed.

Document Number	Action Taken	Complete Title	Project Number
MIL-DTL-38999	EPS	The purpose of this study is to determine if the cavity-to-cavity leakage test found in MIL-DTL-38999 should be retained in the specification, removed from the specification or replaced by another test in the relevant specification.	5935-2019-011
MIL-DTL-83723	EPS	The purpose of this study is to determine if the cavity-to-cavity leakage test found in MIL-DTL-83723 should be retained in the specification, removed from the specification or replaced by another test in the relevant specification.	5935-2019-012

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Sincerely,

ABDONASSER M. ABDOUNI
Chief,
Interconnection Branch

ENGINEERING PRACTICE STUDY

TITLE:

EP Study is to determine whether or not the cavity-to-cavity leakage test should be removed from MIL-DTL-38999 and MIL-DTL-83723.

23 January 2019

Project Numbers:

5935-2019-011 & 5935-2019-012

FINAL REPORT

Study Conducted and
Prepared by

Alexander Baillieul
Lead Engineer
DSCC-VAI

Introduction:

This EP Study is intended to determine whether or not the cavity-to-cavity leakage test should be removed from MIL-DTL-38999 and MIL-DTL-83723.

Background:

For several years, manufacturers of the subject circular electrical connectors have proposed removing cavity-to-cavity leakage as a test method in the relevant specifications. Several manufacturing companies have performed engineering studies over the years to support their contention that these this test should be removed from the two specifications.

Results:

Many differing comments were submitted for consideration concerning the removal of this test method from the circular connector specifications. Several key points were noted:

1. The requirement is very difficult to meet during testing. The test method is complex and requires custom-made equipment to perform successfully.
2. The test setup can lead to damage of connector inserts if not performed exactly correctly. Several entities responding indicated that the test itself could also be the cause of recorded failures.
3. Improvements in plasma etching and adhesive formulation have led to much higher-performance bonds in connector inserts than were achievable when this requirement was added to the specifications.
4. Other test methods in the specifications (Dielectric Withstanding Voltage, Insert Bond Strength) either directly or indirectly evaluate bonding sufficiency in a connector insert.
5. Destructive testing (sectioning) of inserts was proposed as a solution for organizations wanting a more rigorous look at bonding sufficiency.
6. A large majority of respondents favored removal of the test method from MIL-DTL-38999 and MIL-DTL-83723.

Conclusion:

Based on the preponderance of comments in favor of removal and after engineering evaluation, DLA has determined that this test method should not be retained in the subject specifications.

Recommendations:

DLA-CC will remove the cavity-to-cavity leakage test requirement from both MIL-DTL-38999 and MIL-DTL-83723.