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DSCC-V (VAI/Mr. Baillieul/614-692-2867)

MEMORANDUM FOR MILITARY/INDUSTRY DISTRIBUTION

SUBJECT: 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 specifications, removed from the specifications or replaced by another test in the relevant specifications. Project number 5935-2019-011.

Question #1. What should be the status of the cavity-to-cavity leakage test in MIL-DTL-38999 (paragraph 4.5.44, EIA-364-78)?

- 1) Should the test as specified in MIL-DTL-38999 be retained as-is in the specification?
- 2) Should the test as specified in MIL-DTL-38999 be removed from the specification?
- 3) Is there a replacement test that should be inserted into MIL-DTL-38999 lieu of the cavity-to-cavity leakage test?

Background: The cavity-to-cavity leakage test is intended to evaluate bonding integrity inside the connector insert stack. For connectors lacking a good bond, the most likely failure mode is a shorting condition between adjacent contacts. Higher voltage applications increase this risk. Mitigating factors preventing this condition include multiple and redundant sealing mechanisms preventing moisture ingress and 100% electrical testing (DWV & IR) performed on all connectors produced under the subject military specification. Criticisms of the test include a lack of similarity to field conditions, difficulty in performing the test effectively in a production setting and a potential for connector insert damage due to performance of the test. Potential replacement tests suggested include destructive analysis during qualification testing and/or an angular pull test during qualification testing. Additionally, there is a specified test currently active in MIL-DTL-38999 (mechanical axial pull test, paragraph 4.5.46, EIA-364-79) which evaluates insert bond strength.

Applicable documents include MIL-DTL-38999 and EIA-364-78.

Please provide this office with your response or comments within 30 days of the date of this Memorandum. Lack of response will be construed as concurrence or lack of interest.

If there are any questions please contact Mr. Alexander Baillieul, phone number 614-692-2867, facsimile transmission, 614-692-6939, e-mail alexander.baillieul@dla.mil, or may be mailed via the US Postal Service to DLA LAND AND MARITIME, ATTN: VAI (Attention: Alexander Baillieul), P.O. Box 3990, Columbus, OH 43218-3990.

Sincerely,

/ SIGNED /

ABDONASSER M. ABDOUNI
Chief,
Interconnection Branch