

ENGINEERING PRACTICE STUDY

TITLE: Concerning MIL-PRF-83726 paragraph 4.7.25 a., replacing “Test condition letter: As specified (see 3.1)” with “Test condition letter: B”

03 March 2022

STUDY PROJECT (SEE ATTACHMENT 1)

FINAL REPORT

Study Conducted by DLA Land and Maritime

Project Number: 5945-2022-019

Prepared by:

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ATTACH 1

I. OBJECTIVES: This engineering practice study is being conducted to determine the acceptability of replacing paragraph 4.7.25 a. “Test condition letter: As specified (see 3.1)”, with “Test condition letter: B” to clarify required Test Condition of MIL-STD-202-107.

II. BACKGROUND: At this time, paragraphs 4.7.25 a, 3.1, as well as supporting slash sheets fail to identify required Test Condition of MIL-STD-202-107. As such, there is no documented instruction for a Test Condition – resulting in an incomplete set of test requirements.

Questions needing answers are:

1. Will changing paragraph 4.7.25 a support identification of the required MIL-STD-202-107 Test Condition?
2. Will changing MIL-PRF-83726; 4.7.25 a from “Test condition letter: As specified (see 3.1)”, to “Test condition letter: B” support the test instruction?
3. Should the document be updated to identify another Test Condition of MIL-STD-202-107?
4. Should the document remain as is and the associated active and inactive slash sheets (i.e. MIL-PRF-83726/7, /8, /12, /13, / 14, /18, /19, /20, /21, /22, /23, /24, /25, /27, /28, /29, /30, /31, /35, /36) be updated to uniquely identify a specific Test Condition letter.

III. RESULTS: The document was reviewed and a DoD position determined. A survey letter was sent to all QPL manufacturers and document custodians/reviewers. The response is summarized below.

1. Will changing paragraph 4.7.25 a support identification of the required MIL-STD-202-107 Test Condition?

Yes, changing paragraph 4.7.25 a will support identification of the required MIL-STD-202-107 Test Condition.

2. Will changing MIL-PRF-83726; 4.7.25 a from “Test condition letter: As specified (see 3.1)”, to “Test condition letter: B” support the test instruction?

Yes, changing MIL-PRF-83726; 4.7.25 a from “Test condition letter: As specified (see 3.1)”, to “Test condition letter: B” support the test instruction. However, the varying temperature of the associated slash sheets fall outside of the stated temperature range of Step 1, 2, 3, 4, and 5..

3. Should the document be updated to identify another Test Condition of MIL-STD-202-107?

No. The document shall identify Test Condition letter B of MIL-STD-202-107. Currently, QPL manufacturers are using MIL-STD-202-107 to fulfill requirements of Thermal Shock inspection.

4. Should the document remain as is and the associated active and inactive slash sheets (i.e. MIL-PRF-83726/7, /8, /12, /13, / 14, /18, /19, /20, /21, /22, /23, /24, /25, /27, /28, /29, /30, /31, /35, /36) be updated to uniquely identify a specific Test Condition letter.

No, the document shall be updated as listed below to allow associated active and inactive slash sheets to maintain existing wording.

4.7.25 Thermal shock (see 3.32). Relays shall be tested in accordance with MIL-STD-202-107 Table 1 Thermal shock test conditions (air) 1/. The following details shall apply:

- a. Test condition letter: B.
- b. Temperature of Step 1, 2, 3, and 4: shall fall within requirements of stated temperature range.
- c. Measurement after cycling: Relays shall be visually examined for cracking, peeling, and flaking of the finish, and the DWV, IR, contact voltage drop (or resistance), timing cycle, and recycle time shall be measured as specified in 4.7.4.1, 4.7.5, 4.7.6, 4.7.16.1.1, and 4.7.17.1, respectively.

IV. CONCLUSIONS: It was determined DLA Land and Maritime adopt the proposal to change 4.7.25 as listed below.

4.7.25 Thermal shock (see 3.32). Relays shall be tested in accordance with MIL-STD-202-107 Table 1 Thermal shock test conditions (air) 1/. The following details shall apply:

- a. Test condition letter: B.
- b. Temperature of Step 1, 2, 3, and 4: shall fall within requirements of stated temperature range.
- c. Measurement after cycling: Relays shall be visually examined for cracking, peeling, and flaking of the finish, and the DWV, IR, contact voltage drop (or resistance), timing cycle, and recycle time shall be measured as specified in 4.7.4.1, 4.7.5, 4.7.6, 4.7.16.1.1, and 4.7.17.1, respectively.

V. RECOMMENDATIONS: The document has concurrence to change paragraph 4.7.25 a., as well as b., to provide inspection guidance.