



DEFENSE LOGISTICS AGENCY
LAND AND MARITIME
POST OFFICE BOX 3990
COLUMBUS, OH 43218-3990

October 19, 2020

MEMORANDUM FOR MILITARY/INDUSTRY DISTRIBUTION

SUBJECT: Initial draft; Engineering Practice Study (EPS), adding an optional Thermal Cycle test to MIL-PRF-27 and MIL-STD-202; Project Number: 5950-2020-023

The initial draft of this subject document, dated 19 October 2020, is now available for viewing and downloading from the DLA Land and Maritime-VA Web site:

<https://www.landandmaritimeapps.dla.mil/Programs/MilSpec/initialdrafts.aspx>

Recommended test procedures should be submitted to this Center no later than 45 days from the date of this letter.

Concurrence or comments are required at this Center no later than 45 days from the date of this letter. Late comments will be held for the next coordination of the document. Comments from military departments must be identified as either "Essential" or "Suggested". Essential comments must be justified with supporting data. Military review activities should forward comments to their custodians or this office, as applicable, in sufficient time to allow for consolidating the department reply. Lack of response will be construed as concurrence with or no interest in this draft.

The point of contact for this document is Mr. Ken Beymer, DLA Land and Maritime, VAT, P. O. Box 3990, Columbus, OH 43218-3990. The preferred method of contact is via e-mail: ken.beymer@dlam.mil. Mr. Beymer can also be reached at (614) 692-0557/DSN 850-0557, or by facsimile (614) 692-6939.

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Michael A. Radecki
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cc:
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ENGINEERING PRACTICE STUDY

TITLE: Thermal Cycling test method for ferrite cores

19 October 2020

PROJECT NUMBER
5950-2020-023

INITIAL REPORT

Study Conducted and
Prepared by:

Ken Beymer

- I. OBJECTIVES. The objective of this study is to determine whether an option to use Thermal Cycling is a good alternative to Thermal shock. MIL-STD-202-107 is the prevailing test procedure but it is an uncontrolled rate of change as compared to a Thermal Cycle (i.e. $X^{\circ}\text{C} \pm Y^{\circ}\text{C} / \text{minute}$ change)...and for some programs the Thermal Shock is considered an unnecessary over stress to the component. Since there is no other outlet in MIL-STD-202 to temperature stress, method 107 is settled for.
A thermal cycle would have a (Tmin) minimum and (Tmax) maximum temperature with a given rate of change between 3 - 8°C/minute. Also, should a new test procedure for Thermal cycling be added to MIL-STD-202 and MIL-PRF-27 or just MIL-STD-202 and have MIL-PRF-27 reference MIL-STD-202?
- II. BACKGROUND. There has been customer concerns over Thermal Shock testing ferrite core designs. Specifically the rapid rate of change between temperature extremes as being hazardous to the cores and potentially causing cracking of the ferrite.
- III. RESULTS. After comparing gathered information, comments, and reviews, I will announce the results of the study in a Final Report.
- IV. CONCLUSIONS. No conclusion has been determined yet. The conclusion of the study will be in the Final Report.
- V. RECOMMENDATIONS. Recommendations of the study will be in the Final Report. No recommendations at this time.