

ENGINEERING PRACTICES STUDY

PROJECT NUMBER: 60GP-2008-046

TITLE:

Establish/Locate Alternate Method for Measuring Defects in Optical Fiber since TIA-455-59 has
been Withdrawn

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FINAL REPORT

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I. **OBJECTIVE:** The objective of this study was to establish a replacement document and/or procedure for measuring defects in optical fiber. Information obtained through this EPS will be incorporated into a revision to MIL-PRF-49291.

II. **BACKGROUND:** Contacted all four optical fiber manufacturers on the MIL-PRF-49291 QPL and discussed with them the withdrawal of TIA-455-59 along with possible replacement methods with the following results:

Manufacturer	Reply
Draka	IEC-60793-1-40, method C
General Cable	IEC-60793-40
OFS	FOTP-78 & IEC-60793-1-40 are carbon copies of each other, appendix C of IEC provides calculations
Corning	FOTP-78

III. **RESULTS:** Following discussions with manufacturers, either IEC-60793-1-40 appendix C or TIA-455-78 method C should be referenced for measuring defects in optical fiber.

IV. **CONCLUSIONS:** Based on the information obtained along with the fact that the IEC and FOTP methods are equivalent, specify TIA-455-78 method C to measure defects in optical fiber.

V. **RECOMMENDATIONS:** During the revision of MIL-PRF-49291, specify TIA-455-78 method C instead of TIA-455-59 for measuring defects in optical fiber.

NOTE, with the change to TIA-455-78 (from one to three methods) and because TIA-455-78 is already referenced in MIL-PRF-49291 for the measurement of attenuation rate, the verification of attenuation rate will be revised to TIA-455-78 method A.