

METRIC

MIL-PRF-24623/6
28 June 2007

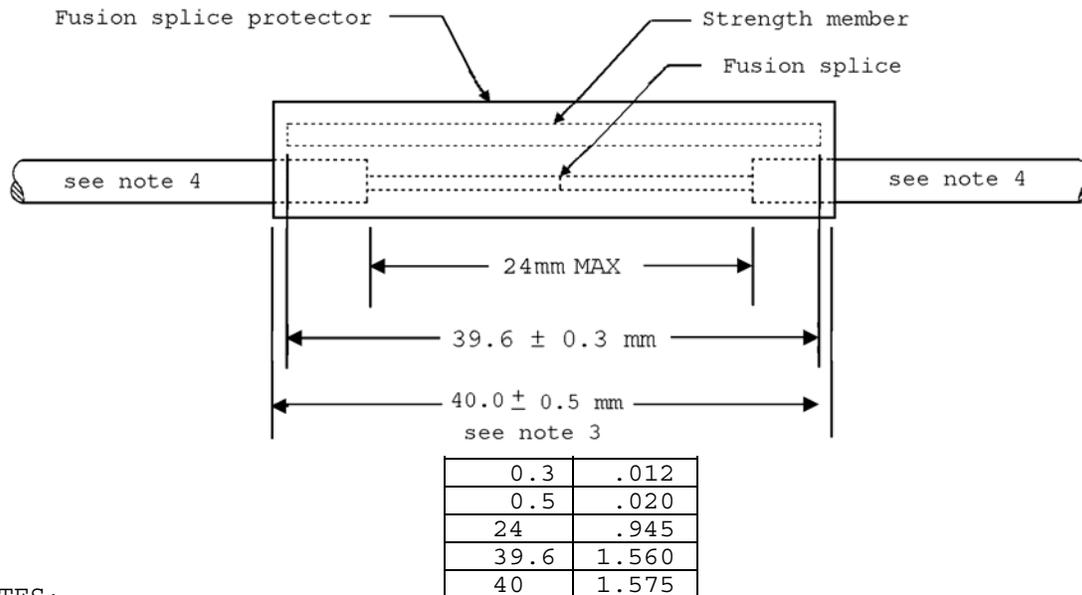
PERFORMANCE SPECIFICATION SHEET

SPLICE, FUSION, FIBER OPTIC CABLE, PROTECTOR

This specification is approved for use by all Departments and Agencies of the Department of Defense

The requirements for acquiring the product described herein shall consist of this specification sheet and MIL-PRF-24623.

SCOPE: The performance requirements specified herein cover splice protectors suitable for military use with multi mode or single mode optical cables and fibers.



NOTES:

1. Dimensions are in millimeters.
2. Inch equivalents are given for general information only.
3. Minimum splice length is preferred.
4. Applicable fiber types include M49291/6 and M49291/7.

FIGURE 1. Fusion splice protector.

AMSC N/A

FSC 6060

Axial compressive loading: Not applicable.

Crush: Not applicable.

Vibration: Applicable with the following modification. Shall be tested when installed in tray and tray holders qualified to MIL-DTL-24728/8. Shall be tested in accordance with test condition II and test condition VII (test condition letter C) of TIA/EIA-455-11. The test duration for test condition VII shall be 30 minutes for each axis. The frequency range of test for test condition II shall be extended to a low frequency of 4 Hz.

Mechanical shock: Applicable with the following modification. Mechanical shock test shall be performed when installed in tray and tray holders qualified to MIL-DTL-24728/8.

Dynamic strength: The dynamic strength of the splice (with the fusion splice protector installed) shall be tested in accordance with TIA-455-28 by applying an axial tensile load (see table I) between the two fused fibers until failure. The change in optical transmittance shall be monitored during the dynamic strength test. The load at optical failure shall not be less than 8.9 N (2.0 lbs).

TABLE I. Dynamic Strength test load.

Configuration	Figure	Force (N/lb)
Protected	1	8.9/2.0

Fiber pull out force: Not applicable.

Cable pull Out force: Not applicable.

Insertion loss: Applicable with the following modification. The insertion loss for splices shall not exceed 0.2 dB. The insertion loss shall not exceed 0.5 dB at any time during any testing of the splice.

Return loss: Applicable with the following modification. Return loss shall be greater than or equal to 58 dB for single-mode.

Crosstalk: Not applicable.

Environmental:

Operating temperature: -28°C to +65°C (-18.4°F to +149°F)

Non-operating temperature: -40°C to +70°C (-40°F to +158°F)

Storage temperature: -40°C to +70°C (-40°F to +158°F)

Thermal shock: Applicable with the following modification. The storage temperature range shall be as specified herein.

Temperature/humidity cycling: Applicable with the following modification. During and after the temperature/humidity cycling test, the splice shall meet the requirements of the change in optical transmittance. A post test visual examination of the test specimens

shall reveal no leakage of waterproofing compounds or other apparent loss of sealing capability, no surface or identification marking impairment, nor any damage detrimental to the operation of the test specimens. The operating temperature range shall be used as specified herein.

Water pressure: Not applicable.

Freezing water immersion: Not applicable.

Nuclear radiation resistance: Not applicable.

Fluid immersion: Not applicable.

Flammability: Not Applicable.

Temperature cycling: Splices shall be tested in accordance with EIA/TIA-455-3 using the test condition schedule and soak times in accordance with table II. The change in optical transmittance shall be measured during and after the test. A post test visual examination of the test specimens shall reveal no leakage of waterproofing compounds or other apparent loss of sealing capability, no surface or identification marking impairment, nor any damage detrimental to the operation of the test specimens. The operating temperature range shall be as specified herein.

TABLE II. Temperature cycling steps.

Step	Action	Temperature °C (°F)	Duration (hours)
1	Maintain	Room ambient	4 minimum
2	Ramp to	Low operating temp +0/-3 (+0/-5)	2
3	Maintain	Low operating temp +0/-3 (+0/-5)	2 minimum
4	Ramp to	25 ± 2 (77 ± 4)	2
5	Maintain	25 ± 2 (77 ± 4)	2 minimum
6	Ramp to	High operating temp +3/0 (+5/-0)	1
7	Maintain	High operating temp +3, -0 (+5/-0)	2 minimum
8	Ramp to	25 ± 2 (77 ± 4)	1
9	Maintain	25 ± 2 (77 ± 4)	2 minimum
10	Repeat steps 2 through 9, four additional times, for a total of five (5) cycles.		

Life aging: Applicable with the following modification. The splice shall meet the requirements of the dynamic strength test, specified herein, after the test.

VERIFICATION PROGRAM

Verification program. A verification program must be established and maintained in accordance with MIL-STD-790 or comparable standard. Evidence of such compliance will be verified by the qualifying activity of this specification as a prerequisite for qualification and continued qualification. The verification system procedures, planning and all other documentation and data that comprise the verification system must be available to the Government for review. The Government may perform any necessary inspections, verifications and evaluations to ascertain conformance to the requirements and adequacy of the implementing procedures.

QUALIFICATION:

Qualification: With respect to products requiring qualification, awards will be made only for products which are, at the time of award of contract, qualified for inclusion in Qualified Products List QPL No. 24623 whether or not such products have actually been solicited by that date. The attention of the contractors is called to these requirements, and manufacturers are urged to arrange to have the products that they propose to offer to the Federal Government tested for qualification in order that they may be eligible to be awarded contracts or purchase orders for the products covered by this specification. Information pertaining to qualification of products may be obtained from the Defense Supply Center Columbus, DSCC-VQ, 3990 East Broad Street, Columbus, OH 43218-3990, or by e-mail to vgp.chief@dla.mil.

Re-qualification period: As long as the material supplied is identical in every respect to the qualification sample tested and found satisfactory, then the period for re-qualification is to be every 10 years.

Intended use: The splice and splice protector are intended for use in all applications inside protective enclosures utilizing splice trays and splice tray holders in accordance with MIL-DTL-24728/8.

Referenced documents. In addition to MIL-PRF-24623, this specification sheet references the following documents:

A-A-59799	EIA/TIA-455-3
MIL-DTL-24728/8	TIA/EIA-455-11
MIL-STD-790	TIA-455-28

Custodians:

Army - CR
Navy - SH
Air Force - 11
DLA - CC
NASA - NA

Preparing activity:

Navy - SH

Agent:

DLA - CC

(Project 6060-2006-026)

Review activities:

Army - AR, MI
Navy - AS, CG, EC, MC
Air Force - 19, 93, 99

NOTE: The activities listed above were interested in this document as of the date of this document. Since organizations and responsibilities can change, you should verify the currency of the information above using the ASSIST Online database at <http://assist.daps.dla.mil/>.