

Subj: USAGE OF COMMERCIAL OFF-THE-SHELF (COTS) FIBER OPTIC
COMPONENTS

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REQUIREMENTS ON THE USAGE OF COMMERCIAL OFF-THE-SHELF (COTS)
FIBER OPTIC COMPONENTS

Commercial off-the-shelf (COTS) fiber optic components may be used in some Navy fiber optic systems depending upon the type of system and the detailed application. The requirements for COTS fiber optic components for mission critical and non-mission critical applications are detailed below.

MISSION CRITICAL APPLICATIONS

Commercial off-the-shelf (COTS) fiber optic components shall not be used external to system equipment in mission critical applications.

COTS fiber optic components may be used internal to system equipment in mission critical applications only if the equipment configured with the COTS components passes the required equipment qualification tests and meets the following limitations.

1. All COTS fiber optic cable, connectors, and splices used shall be supportable using the standard Navy shipboard fiber optic repair and test equipment.
2. COTS fiber optic cables shall utilize MIL-F-49291 compatible fibers.
3. COTS single fiber connectors shall be compatible with the MIL-C-83522/16 connector and shall be supportable with the tools for the MIL-C-83522/16 connector.
4. COTS single fiber splices shall be compatible with the MIL-S-24623/4 splice and shall be supportable with the tools for the MIL-S-24623/4 splice.

NON-MISSION CRITICAL APPLICATIONS

COTS fiber optic components may be used internal or external to system equipment in non-mission critical ship systems subject to the following limitations.

1. COTS fiber optic cable, connectors, splices, and interconnection boxes used shall be supportable using the standard shipboard fiber optic repair and test equipment.
2. COTS fiber optic cables shall be used only within compartments and shall not pass through bulkhead or deck penetrations. In addition, COTS fiber optic cables shall be low halogen, low smoke, low toxicity, low acid gas generation, breakout style cables which utilize MIL-F-49291 compatible fibers (see MIL-C-85045 for definitions for low halogen, low smoke, low toxicity, and low acid gas generation).

3. COTS single fiber connectors shall be compatible with the MIL-C-83522/16 connector and shall be supportable with the tools for the MIL-C-83522/16 connector.

4. COTS single fiber connectors used external to equipment or interconnection boxes shall be physically protected or shielded. Cables terminating to COTS single fiber connectors external to equipments or interconnection boxes shall be strain relieved to the equipment using cable clamps or other appropriate devices.

5. COTS single fiber splices shall be compatible with the MIL-S-24623/4 splice and shall be supportable with the tools for the MIL-S-24623/4 splice.

6. COTS termination boxes shall meet the Grade B requirements of MIL-S-901 and may be used to terminate COTS fiber optic cables or MIL-C-85045 fiber optic cables.