

NAVSEA 05Z3

Electrical Systems Technical Update

Presented at the National Shipbuilding Research Program
Electrical Technologies Panel Meeting
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SEA 05Z33

NAVAL SEA SYSTEMS COMMAND

- NAVSEA 05Z3 Priorities
- Summary of Standards and Specifications Projects
- NSRP Electrical Technologies Supported Projects

NAVSEA 05Z High Priority Items

SEA 05Z is working on the updated fire protection and qualification test requirements details for Qualification of Cable Sealants to MIL-I-3064 and Multi-Cable Transits to MIL-DTL-24705.

Reviewing test plans for qualification approval of NSRP sponsored MCTs and Cable Sealing Systems.

Revising the Flammability Test requirements for MIL-I-24391C Insulation Tape Electrical Pressure Sensitive. Using modified UL 510A 20 Flame Test requirements instead of the current MIL-I-24391C flammability test requirement.

Standard for Electrical Enclosures Update MIL-STD-108

Definitions Basic Requirements Enclosures for Electric and Electronic Equipment

- Last updated in 1985 but no significant changes since 1966
- ✓ Updated all references e.g. IEC 60947-1
- ✓ Aligned with MIL-DTL-2036
- ✓ Added reference to Composite Enclosures Drawing
- ✓ Included a cross-reference table for enclosure rating definitions comparison to IP and NEMA
- ✓ Final SRB were adjudicated.
Publication is expected in May 2024.

MIL-S-24235C Stuffing Tubes, Metal, and Packing Assemblies for Electric Cables, General Specification - 19 slant sheets for

- Specification has been template, updating cancelled references and all data tables to remove errors. Cleaning up figures work is complete.
- Review for SRB in process.

Electrical Cables

MIL-DTL-24643D and 85 Slant Sheets

- **PUBLISHED 27 NOV 2023**

INCH-POUND

MIL-DTL-24643D

27 November 2023

SUPERSEDING

MIL-DTL-24643C

w/INT. AMENDMENT 1

11 July 2011

MIL-DTL-24643C

1 October 2009

DETAIL SPECIFICATION

CABLES, ELECTRIC, LOW SMOKE, HALOGEN-FREE, FOR SHIPBOARD USE

GENERAL SPECIFICATION FOR

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

1. SCOPE

1.1 Scope. This specification covers low smoke, halogen-free electric cable for Navy shipboard applications.

1.2 Classification. Cable constructions covered by this specification are either armored, unarmored, or unarmored with overall shielding; are classified as watertight, watertight (with circuit integrity), non-watertight, and non-watertight (with circuit integrity); and further classified for flexing and nonflexing service for power, lighting, control, communications, instrumentation, and electronic applications (see supplement). A part or identifying number (PIN) for cable is as specified in 1.3 and the applicable specification sheet (see 3.1).

1.3 Part or identifying number (PIN). PINs to be used for low smoke, halogen-free electric cable acquired to this specification are created as follows:

M	24643	/XX	:	XX	A or U	O or D or N
Prefix	Specification Number	Specification Sheet Number		Dash Number (See Specification Sheets)	A = Armored U = Unarmored	O = Overall shield D = Double overall shielded N = Not shielded

2. APPLICABLE DOCUMENTS

2.1 General. The documents listed in this section are specified in sections 3 and 4 of this specification. This section does not include documents cited in other sections of this specification or recommended for additional information or as examples. While every effort has been made to ensure the completeness of this list, document users are cautioned that they must meet all specified requirements of documents cited in sections 3 and 4 of this specification, whether or not they are listed.

Comments, suggestions, or questions on this document should be addressed to Commander, Naval Sea Systems Command, ATTN: SEA 05S, 1333 Isaac Hull Avenue, SE, Stop 5160, Washington Navy Yard DC 20376-5160 or emailed to usn.ncr.comnavseasyscomdc.mbx.command-standards@us.navy.mil, with the subject line "Document Comment". Since contact information can change, you may want to verify the currency of this address information using the ASSIST Online database at <https://assist.dla.mil>.

AMSC N/A

FSC 6145

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Electrical Cables Assemblies Connectors

MIL-DTL-24640 Cables Lightweight Low Smoke

- Review in progress

MIL-HDBK-299 Electrical Cable Comparison Handbook –October 1991

Cable Data Pertaining to Electric Shipboard Cable

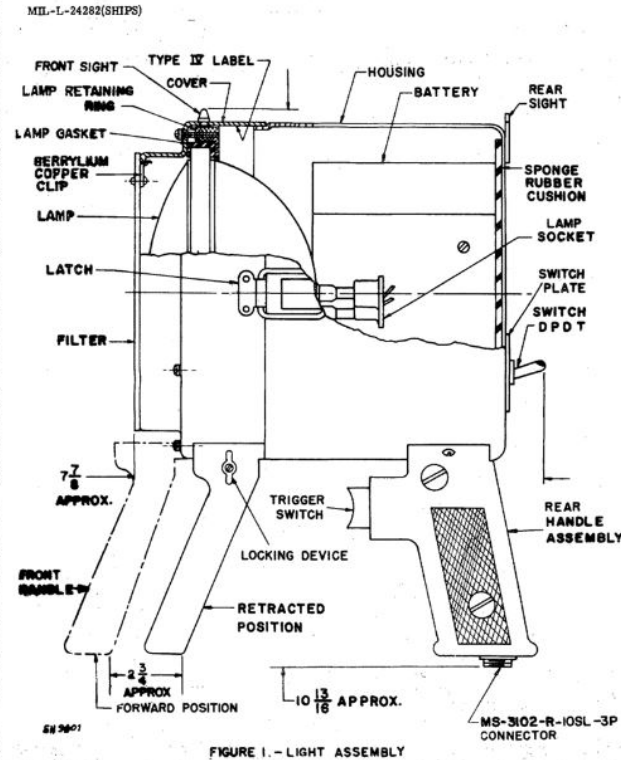
- Include cables new to MIL-DTL- 24643 and MIL-DTL-24640 and other new cables introduced after 1991
- MV cables (rated 5 KV and 15 KV) to be included in addition to LV rated cables (<1KV)
- NEMA Cable manufacturers added to the SRB reviewer list
- Updated cable ampacity and bend radius data tables
- Added updated information for each cable type.
- NSRP SHIP YARDS and NAVY end users and designers are encouraged for SRB review.
- **SRB review ends April 5 – but will extend to accommodate review.**

Lighting

- **16377/60B** Incandescent Floodlights 150W Sym 316 & 317 **25-Jan-2022**
Develop detailed requirements for dimmable SSL floodlights compatible with existing shipboard lighting distribution architecture. Address topside night time operation minimum illumination requirements.
- **16377/61A** Incandesced & SSLFloodlights 300W Sym 303.2 303.3 303.4 303.2SSL 303.3SSL 303.4SSL **02-Nov-2021** – Action needed to add electrical ground check test for Type III (SSL) fixture.
- **16377/86B** Lamp SSL for use as Replacement for Commercial Fluorescent Lamp **Published 02-Nov-2021** – Action needed to address electrical safety tests needed for LED replacement tubes.

Proposed Starts for FY 2025

- **MIL-L-24282 SYM 106.1**
Light Signal Multi-Purpose



- **MIL-P-24175** plus 5 slant sheets **Panels Power Supply and Control for Navigation Lighting** 15 Sept 1967
- **MIL-DTL-16034** **Meters, Electrical Indicating Switchboard and Portable**

- **DOD-HDK-289 Shipboard Lighting**
- **Distributed Temperature Sensor for Electrical Switchboards**
- **Shore Power Connector Test Set**

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MFPT 2024 Conference Website (registration and hotel)
<https://asnt.eventsair.com/mfpt-2024-annual-meeting/>

Questions?