

NOTE: DOD-STD-2003 has been redesignated as a standard practice. The cover page has been changed for Administrative reasons. There are no other changes to this Document. In addition, all slant sheets associated with this document are hereby designated as standard practice

INCH - POUND

DOD-STD-2003-(SH)  
24 June 1987  
SUPERSEDING  
NAVSEA S9300-AW-EDC-010/EPISM  
(INCLUDING NAVSEA DWG. NO.  
803-5001027) AND NAVSEC NO.  
9000-S6202-73980

DEPARTMENT OF DEFENSE  
STANDARD PRACTICE

ELECTRIC PLANT INSTALLATION  
STANDARD METHODS FOR  
SURFACE SHIPS AND SUBMARINES



AMSC N/A

AREA GDRQ

DISTRIBUTION STATEMENT B. Distribution limited to U.S. Government agencies only for administrative and operational use. Other requests for this directive must be referred to NAVSEA (SEA 05Q).

DDO-STD-2003(NAVY)

24 June 1987

DEPARTMENT OF THE NAVY  
NAVAL SEA SYSTEMS COMMAND

Washington, DC 20362-5101

Electric Plant Installation Standard Methods for Surface Ships and Submarines

1. This Military Standard is approved for use by the Naval Sea Systems Command, Department of the Navy, and is available for use by all Departments and Agencies of the Department of Defense.
2. Beneficial comments (recommendations, additions, deletions) and any pertinent data which may be of use in improving this document should be addressed to: Commander, Naval Sea Systems Command, SEA 5523, Department of the Navy, Washington, DC 20362-5101 by using the self-addressed Standardization Document Improvement Proposal (DD Form 1426) appearing at the end of this document or by letter.

DOD-STD-2003(NAVY)  
24 June 1987

FOREWORD

1. The criteria contained herein for the installation of the electrical plant on ships of the United States Navy supersede the data contained in Sections 1 through 5 of NAVSHIPS Drawing 9000-S6202-73980, NAVSEA Drawing No. 803-5001027 and NAVSEA PUBLICATION S9300-AW-EDG-010/EPISM.
2. This standard disseminates up-to-date information detailing Requirements for Standard Installation Methods Employed for Submarine and Surface Ship Electrical Distribution Systems.
3. These criteria apply to work on a specific ship or ships only when invoked by the Ship Specifications or similar contractual documents.
4. Although these criteria are primarily for application to new construction, their use may be considered in the conversion or alteration of existing ships. In such cases the degree of applicability of these criteria will be specified by the activity preparing the instructions for the work.
5. Considering the magnitude of this standard, along with the changing requirements imposed on the Electric Plant, it is inevitable that changes will be required to up-date these criteria. Therefore, as comments arise they should be forwarded to Naval Sea Systems Command (NAVSEA) 55Z3 to keep this standard as current as possible through subsequent revisions. Revisions will be accomplished by the issuance of additional or revised figures to be inserted in the basic standard sections. Document Improvement Proposal Form DD 1426 attached. Superseded pages may be retained for reference if so desired.
6. This standard is available in a 8-1/2 X 11 hard copy, in microfilm aperture cards, or in microfiche. It is available in 8-1/2 X 11 hard copy from Commanding Officer, Naval Publications and Forms Center, 5801 Tabor Avenue, Philadelphia, PA 19120. Microfilm aperture card or microfiche are available from Commanding Officer, Portsmouth Naval Shipyard, Code 202.2, Portsmouth, NH 03801. All revisions on microfilm aperture cards, or on microfiche are automatically distributed to a previously approved distribution list. (Tel: (207) 439-1000, Ext. 1718, Autovon 684-1718). Activities having a requirement to be placed on the distribution or for additional copies should forward these requests to Commander, Naval Sea Systems Command, SEA 55Z3, Department of the Navy, Washington, DC 20362-5101. Aperture cards have been distributed to those activities presently on the distribution for NAVSEA Standard and Type Drawing microfilm aperture card sets. Microfiche has been distributed to all active ships.

DOD-STD-2003(NAVY)  
24 June 1987

CONTENTS

	<u>Page</u>
Paragraph 1. SCOPE .....	1
1.1 Purpose .....	1
1.2 Application .....	1
2. REFERENCED DOCUMENTS .....	1
2.1 Government documents .....	1
3. DEFINITIONS (Not applicable) .....	2
4. GENERAL REQUIREMENTS (Not applicable) .....	2
5. DETAILED REQUIREMENTS (Not applicable) .....	2
6. NOTES .....	2
6.1 Intended use .....	2
6.2 Designation of electric plant installation standard methods figures .....	2
6.3 Subject term (key word) listing .....	3

DOD-STD-2003(NAVY)  
24 June 1987

## 1. SCOPE

1.1 Purpose. The purpose of this standard is to disseminate up-to-date information as to the requirements for standard installation methods to be employed for submarine and surface ship electrical distribution systems. The criteria contained herein are based on both new requirements and past practices. This standard will consist of six parts, with the first part covering the general information followed by five sections which will identify shipboard installation requirements for electrical cable, equipment, penetrations, cableways and connectors. The six individual sections that make up this standard may be referenced or revised separately and are as follows:

- |                          |  |
|--------------------------|--|
| Section 1 (Cable)        | - Preparation and end-sealing, entry to equipment and connectors, repair and splicing.   |
| Section 2 (Electrial)    | - Equipment mounting, switchboard mounting, battery equipment, casualty power and shore power.   |
| Section 3 (Penetrations) | - Swage tubes, stuffing tubes, kickpipes, surface ships and submarines, hull penetration and general.  |
| Section 4 (Cableways)    | - General, submarine, surface ship and cable protection.   |
| Section 5 (Connectors)   | - Cable and conductor preparation in accordance with MIL-C-81511, MIL-C-5015, MIL-C-26482, MIL-C-28840, MIL-C-27599, MIL-C-22992 and MIL-C-38999 connectors. |

1.2 Application. Electrical plant installation methods sections 1 through 5 shall be used by all installing activities. These sections do not identify ship or type, but do establish minimum standards of acceptance for NAVSEA ships. It is the responsibility of the user activity to determine which section satisfies their requirements. It does not authorize relaxation of any requirement specifically invoked by new construction, conversion, overhaul, or refurbishment contracts. In instances where deviated design requirements (for example, ship type, ship class, and so forth) conflict, the requirements of this standard shall take precedence. Any deviation from electric plant installation identified in this standard shall be submitted to NAVSEA 55Z3 for resolution.

## 2. REFERENCED DOCUMENTS

2.1 Government documents. Specifications, standards, drawings, and publications referenced in each section of this standard shall form a part of the standard to the extent specified herein and, unless otherwise specified, shall be the issue in effect on date of invitation for bids or request for proposal. Copies of specifications, standards, drawings, and publications required by contractors in connection with specific acquisition functions should be obtained from the contracting activity or as directed by the contracting officer.

(SEE SECTIONS 1 THROUGH 5)

DOD-STD-2003(NAVY)  
24 June 1987

### 3. DEFINITIONS

Not applicable. (See sections 1 through 5)

### 4. GENERAL REQUIREMENTS

Not applicable. (See sections 1 through 5)

### 5. DETAILED REQUIREMENTS

Not applicable. (See sections 1 through 5)

### 6. NOTES

6.1 Intended use. This standard specifies the requirements for electric plant installation standard methods to be employed both on surface ships and submarines. Standard methods identified for electric plant installation are intended for new construction only. However, their use may be considered in conversion or alteration of existing ships. In such cases, the degree of applicability of these criteria will be specified by the activity preparing instructions for the work.

6.2 Designation of electric plant installation standard methods figures. Each of the sections of electric plant installation standard methods contain figures that depict standard methods that are applicable for general electric plant installation on both surface ships and submarines. Standard methods shown on the individual sheets of section 1 through 5 of NAVSHIPS Drawing 9000-S6202-73980, NAVSEA Drawing No. 803-50001027 and NAVSEA Publication S9300-AW-EDG-010/EPISM have been assigned a corresponding figure number in this standard. The methods shown on the figures are grouped together providing similar functions. These groups are:

<u>Section</u>	<u>Group</u>	<u>Title</u>
1 (Cables)	A	Cable preparation and end-sealing
	B	Cable entry to equipment
	C	Cable entry to connectors
	D	Cable repair
	E	Cable splicing
2 (Equipment)	A	Equipment mounting
	B	Switchboard mounting
	C	Battery equipment
	D	Casualty power
	E	Shore power
3 (Penetrations)	A	Stuffing tubes (submarines)
	B	Stuffing tubes (surface ships)
	C	Stuffing tubes (general)
	D	Kickpipes

DOD-STD-2003(NAVY)  
24 June 1987

<u>Section</u>	<u>Group</u>	<u>Title</u>
4 (Cableways)	A	Cableways (submarines)
	B	Cableways (surface ships)
	C	Cableways (general)
	D	Cable protection
5 (Connectors)	A	Cable lead preparation
	B	MIL-C-81511 connectors
	C	MIL-C-5015 connectors
	D	MIL-C-26482 connectors
	E	MIL-C-28840 connectors
	F	MIL-C-27599 connectors
	G	MIL-C-22992 connectors
	H	MIL-C-38999 connectors

6.3 Subject term (key word) listing.

Not applicable. (See sections 1 through 5)

Preparing activity:  
Navy - SH  
(Project GDRQ-N066)

**INSTRUCTIONS:** In a continuing effort to make our standardization documents better, the DoD provides this form for use in submitting comments and suggestions for improvements. All users of military standardization documents are invited to provide suggestions. This form may be detached, folded along the lines indicated, taped along the loose edge (*DO NOT STAPLE*), and mailed. In block 5, be as specific as possible about particular problem areas such as wording which required interpretation, was too rigid, restrictive, loose, ambiguous, or was incompatible, and give proposed wording changes which would alleviate the problems. Enter in block 6 any remarks not related to a specific paragraph of the document. If block 7 is filled out, an acknowledgement will be mailed to you within 30 days to let you know that your comments were received and are being considered.

**NOTE:** This form may not be used to request copies of documents, nor to request waivers, deviations, or clarification of specification requirements on current contracts. Comments submitted on this form do not constitute or imply authorization to waive any portion of the referenced document(s) or to amend contractual requirements.

(Fold along this line)

(Fold along this line)

DEPARTMENT OF THE NAVY

COMMANDER  
NAVAL SEA SYSTEMS COMMAND (SEA 5523)  
DEPARTMENT OF THE NAVY  
WASHINGTON, DC 20362-5101



NO POSTAGE  
NECESSARY  
IF MAILED  
IN THE  
UNITED STATES

**OFFICIAL BUSINESS**  
PENALTY FOR PRIVATE USE \$300

**BUSINESS REPLY MAIL**  
FIRST CLASS PERMIT NO. 12503 WASHINGTON D. C.

POSTAGE WILL BE PAID BY THE DEPARTMENT OF THE NAVY

COMMANDER  
NAVAL SEA SYSTEMS COMMAND (SEA 5523)  
DEPARTMENT OF THE NAVY  
WASHINGTON, DC 20362-5101



