

NAVSEA  
STANDARD ITEM

FY-18

ITEM NO: 009-11  
DATE: 18 NOV 2016  
CATEGORY: II

1. SCOPE:

1.1 Title: Insulation and Lagging; accomplish |

2. REFERENCES:

2.1 Standard Items

2.2 MIL-STD-769, Insulation Requirements for **U.S. Naval Vessels** |

2.3 804-5959212, Surface Ship Machinery Insulation - Installation  
Details

2.4 804-5959214, Piping Insulation - Installation Details

2.5 804-5773931, Insulation for Compartments, Acoustic and Thermal  
Installation Details

2.6 804-5773932, Insulation for Ducts, Acoustic and Thermal,  
Installation Details

2.7 803-5184182, Insulation, Passive Fire Protection - Installation  
Details

2.8 46 CFR Part 164, Materials

2.9 S4823-C-3160935, Fasteners for Insulation and Lagging

3. REQUIREMENTS:

3.1 Install new insulation, lagging, and reusable covers in accordance  
with 2.2 through 2.7, and the following:

3.1.1 Use of elastomeric foam conforming to MIL-P-15280 and  
polyphosphazene conforming to MIL-I-24703 is not permitted.

3.1.2 MIL-PRF-22344 insulation shall not be installed on hot piping  
above one-inch **Nominal Pipe Size (NPS)** and shall be installed only on piping  
with a vertical orientation or in low traffic areas.

3.1.3 Install **insulation, anti-sweat and refrigerant, thermal foam conforming to MIL-PRF-32514** on anti-sweat and refrigeration piping systems that have an operating temperature of minus 20 degrees to 180 degrees Fahrenheit. (See Note 4.6)

3.1.3.1 Install with adhesive conforming to MIL-A-24179.

3.1.3.2 Install rewettable fibrous glass cloth lagging conforming to MIL-C-20079, Type I, Class 6 or 8, in high traffic areas. In addition to the requirements of MIL-C-20079, rewettable lagging shall meet the requirements of Section 164.009-3 of 2.8, unless otherwise approved by NAVSEA.

3.1.4 Utilize Polyimide foam insulation conforming to **MIL-DTL-246888**, Type I, for piping and machinery systems other than systems listed in 3.1.3, and with a maximum operating temperature of 400 degrees Fahrenheit.

3.1.5 Accomplishment of welding, fabrication, and inspection requirements for new fasteners (studs) to support insulation and lagging shall be in accordance with NAVSEA Standard Items (See Note 4.3).

3.1.6 Accomplishment of cleaning and painting requirements for surfaces to be insulated with the exception of non-ferrous and corrosion resistant steel (CRES) piping, plating, and vent ducting shall be in accordance with NAVSEA Standard Items (See Note 4.4).

3.1.7 Secure reusable covers using snap fasteners or laced with copper, brass or soft steel galvanized wire through hooks or rings in accordance with 2.9.

3.1.7.1 Stamp the surface of the lacing washers, piece 200 of 2.8, on the reusable cover with one quarter inch high letters, NO AB, located close to the outer edge of the washer and visible when the reusable cover is installed.

3.2 Accomplishment of cleaning and painting requirements for new insulation, lagging, and reusable covers to match surrounding areas shall be in accordance with NAVSEA Standard items (See Note 4.5).

#### 4. NOTES:

4.1 Known source for EB Spec. 4013:

General Dynamics Company  
Dept. 447 Material Services  
Attn: K. Hamler  
75 Eastern Point Road  
Groton, CT 06340-4899  
Tel: 860-433-2373

4.2 Known sources for rewettable fibrous glass cloth lagging:

BGF Industries, Inc.  
3802 Robert Porcher Way  
Greensboro, NC 27410  
Tel: 800-925-1961

Alpha Associates  
Two Amboy Avenue  
Woodbridge, NJ 07095  
Tel: 732-634-5700

4.3 If welding of fasteners (studs) to support lagging and or insulation of 3.1.5 is required; the use of Category II Standard Item 009-12 "Welding, Fabrication, and Inspection Requirements; accomplish" **of 2.1** will be specified in the Work Item.

4.4 If surfaces are to be insulated with the exception of non-ferrous and corrosion resistant steel (CRES) piping, plating and vent ducting of 3.1.6 is required; the use of Category II Standard Item 009-32 "Cleaning and Painting Requirements; accomplish" **of 2.1** will be specified in the Work Item.

4.5 If cleaning and painting for the new insulation, lagging, and reusable covers to match surrounding areas of 3.2 is required; the use of Category II Standard Item 009-32 "Cleaning and Painting Requirements; accomplish" **of 2.1** will be specified in the Work Item.

**4.6 "Electric Boat Specification No. 4013 Anti-Sweat and Refrigerant Insulation Systems (EB Spec. 4013) and MIL-PRF-32514 are equivalent."**