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Smooth Marbleized Military Switchboard Mats

From: NAVAL SHIPS' TECHNICAL MANUAL
CHAPTER 634
DECK COVERINGS, GENERAL

634-3.8 ELECTRICAL GRADE SHEET AND MAT

634-3.8.1 General: An insulating deck covering is necessary to prevent electric shock to persons who may touch bare, energized, ungrounded circuits while standing on bare decks. Although dry wood decks are not conductive they constitute an electrical hazard when wet. Both metal (steel and aluminum) and wood decks require an insulating deck covering. Insulating deck coverings are not required over non-metallic honeycomb false deck panels. After installation, the decking should be checked at least once annually to ensure that the surface is not cracked, punctured, or perforated and that no metal or conductive particles have become imbedded. If the decking is not cemented, check several areas with calipers. Discard and replace if any thickness is less than 1/32 inch (0.03 inch). However, if the decking is cemented, the thickness should be determined at least annually using a suitable thickness gauge such as one of the magnetic types cited in NSTM Chapter 631.

634-3.8.2 Specification:

- A. Electrical Grade (Dielectric) Sheet, MIL-DTL-15562, type I. Approved marbleized patterns of electric grade sheet are as follows:
1. NSN 7200-01-025-1695, floor covering, marbleized, color - green.
 2. NSN 7220-01-024-9039, floor covering, marbleized, color - beige.
 3. NSN 7220-01-024-9040, floor covering, marbleized, color - blue.
 4. NSN 7220-01-024-9041, floor covering, marbleized, color - terra cotta.
- B. Portable Mat, MIL-DTL-15562, type II, smooth surface . Stock materials which may be used as electrical insulating deck matting on surface ships are:
1. NSN 7220-00-267-4630, solid blue or marbleized blue.
 2. NSN 7220-00-913-8751, solid green or marbleized green.
 3. NSN 7220-00-255-0765, black Type II matting is not recommended for use on submarines.
- C. Portable Mat, MIL-M-15562, type III, Diamond Tread pattern . Diamond tread is available in green or gray as follows:
1. NSN 9Q 7220-01-056-1944, green, 0.188 inches by 36 inches by 25 yards.
 2. NSN 9Q 7220-01-057-1897, gray, 0.188 inches by 36 inches by 25 yards.

634-3.8.2.1 Material There are two types of deck covering for preventing hazardous electrical shock by insulating personnel from direct ground through the metal deck. The deck may be covered with an approved deck material specified for the space such as deck tile and an electrical insulating portable or runner-type deck matting in way of the electrical hazard areas; or an electrical grade sheet may be installed by cementing the sheet over the entire deck. Principal differences are that the sheet material is generally more attractive and is easier to maintain. If the compartment is not a designated electrical space (refer to Table 634-2-1) but contains electrical equipment such as switchboards, panels or electrical insulated work benches and is not protected with an approved electrical sheet deck covering; type I, install an appropriate length of mat, type II, on the deck adjacent to the electrical equipment, insulated work benches, and operating and servicing areas of electrical panels, and switchboards. The mat should be installed over the minimum area necessary to prevent electrical shock hazards; but not less than 3-feet wide. Exposed corners shall be rounded off. Cementing the mat to the deck is optional, except that the material shall be installed without cement in the vicinity of removable deck plates. If the mat is not cemented, stencil an outline of the mat on the deck. Inside the outline, stencil, **ELECTRIC GRADE MAT REQUIRED WITHIN MARKED LINES**, using 3/4-inch or larger letters. As an alternative to the painted stencil, a preprinted self-adhesive plastic film bulls eye may be used. The self-adhesive plastic film shall be 3M Company Y-7902 or equal. If removable (not cemented) electrical grade matting is installed throughout a space, painting an outline of the area is not required, however, the caution stated above shall be stenciled on the deck such that if any section of matting is removed, the words shall be clearly visible. Cementing procedures herein shall be followed. If a compartment is designated an electrical/electronic space (refer to Table 634-2-1), the electrical grade deck covering shall cover the entire space. Although sheet material, Type I, is recommended for these spaces, matting material, Types II, may be used, and should be installed by cementing directly to the deck.

634-3.8.3 Weight:

Electric grade matting weights are:

- A. The weight of the vinyl sheet with adhesive, 1/8-inch thick, is approximately 1.0 lb/ft².
- B. The weight of the matting and cement is approximately 1.5 lbs/ ft² for 3/16-inch thickness.

634-3.8.4 Installation:

634-3.8.4.1 Prior to installation of electrical grade matting, the deck surface must be properly prepared.

1. Over Metal (steel or aluminum) Surface Preparation: Clean, prepare and prime the surface in accordance with paragraph 634-1.5. The matting should be placed or cemented over the primed deck.
2. Over Deck Tile: If the matting is to be cemented, remove all traces of wax and dirt from the deck tiles where the matting is to be located. If a water-base or latex-type adhesive is used, it is recommended that the top surface of deck tiles be lightly abraded with coarse steel wool or fine sandpaper to improve adhesion.

634-3.8.4.2 Install electrical grade matting in accordance with manufacturer's recommendations.

634-3.8.4.2.1 Seams. Electrical insulating deck covering should be installed so that there are no seams within 3 feet of an electrical hazard. Where this is not possible, the seams should be fused chemically, or heat welded or heat fused with a special hot air gun. (Refer to the Naval Ships Technical Manual Chapter 634 – Deck Coverings for full details.) Where heat or chemical fusing is not possible, a 3- or 4-inch wide strip of #51 Scotchtape 20-mil thick Polyvinyl Chloride (PVC) tape (manufactured by 3M™) should be installed beneath the seam to

prevent a direct path to ground via the seam. As an alternative to the PVC tape, a 1-foot wide strip of the electrical grade deck covering may be used under seams.

634-3.8.5 Maintenance:

It is recommended that a floor finish be applied immediately after type I sheet has been installed, and that it be renewed as required in order to reduce soiling and improve appearance.

634-3.8.5.1 The following represents a simple procedure for maintaining electrical grade decking with a moderate soil load. For best results:

1. Sweep or vacuum the floor of all loose dirt and other foreign materials.
2. Fill a mop bucket with a solution of neutral, free-rinsing cleaning detergent, diluted in accordance with manufacturer's directions with hot water.

NOTE: Use a properly diluted cleaning solution for the most efficient cleaning. Using more detergent than recommended will not clean better, or faster, but will result in leaving behind a hazy deposit. This will result in an increased work load for the deck cleaning crew.

3. Dip the mop in the solution and wring the mop so that it is not dripping.
4. Mop an area about 5 ft x 5 ft, turning the mop once, and return the mop to the bucket.
5. Repeat steps 3 and 4, replacing the detergent solution when it gets dirty.

634-3.8.6 Repair:

While it's possible to repair an area of electrical grade deck covering, the repair will not be aesthetic. Complete replacement is usually required.