

NOISE & VIBRATION DESIGN GUIDANCE
DAMPING TILE INSTALLATION
(Prepared by Noise Control Engineering, Billerica, MA)

INTRODUCTION

Damping tiles are to be installed per construction drawings. The purpose of this document is to provide general installation guidelines and procedure for attaching the damping tiles to ship structure.

INSTALLATION GUIDELINES

The guidelines for damping tile installation below have been modified from a Navy document reference [1] to reflect the commercial nature of this project. This document provides details on the application and installation of the damping tiles. Some general guidelines from are as follows:

- Areas to be treated are approximately 70% of the center of plating area. No stiffeners, angles, or flanged plates require damping.
- Do not install damping tiles on curved surfaces having a radius 18 inches or less (Section 2.4.1.a of reference [1]).
- Do not install damping closer than 1 inch from stiffeners (Section 2.4.5 or reference [1]).
- Do not install damping to locations where tile would be less than 8 inches wide or 64 square inches of area (Section 2.4.1.c of reference [1]).
- All areas of coverage shall be with a single damping tile unless the area of coverage is greater than 12x12 inches. (e.g. more than one piece of scrap damping tiles cannot be used to make up treatment any areas).
- Do not install damping tiles over any weld beads
- Do not install damping near any Zinc (Section 2.4.4 of reference [1]).
- Damping tiles are subject to damage by excessive heat. Installed tiles shall be protected from minor welding/burning splatter in the area. No major welding/burning will be allowed in these areas. Any damaged tiles will be replaced.

SUGGESTED ATTACHMENT METHODS (see vendor for specifics):

- 1) High pressure wash 3500 psi to clean wheeled and primed plate.
- 2) Apply (2) coats of International Intershield 300 epoxy primer @ 6.0 mils DF+.
- 3) Layout position of each tile in specified locations.
- 4) Cut tiles to needed size and shape to fit space, drill holes if needed for insulation studs (1" diameter hole).
- 5) Apply adhesive to both 100% of the plate surface and the tile face contact area using a notched trowel.
- 6) Press tile into place with sufficient pressure to assure full contact over 100% of the surface.
- 7) Vertical, sloping and overhead tiles will be braced to hold firmly in place while adhesive is drying.

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- 8) Excess adhesive will be removed immediately.
- 9) During painting and tile installation, the temperature of the work area shall be between 50 and 95 °F.
- 10) Areas in question about coverage will be laid out and then photographed and sent to Engineering for review and approval.
- 11) Adhesive to be used is Phillybond TA-30 (Philadelphia resins). Mixing and application to be per the manufacturer's and tile vendor's requirements.

REFERENCES

1. NAVSEA (NAVSHIPS) 0939-LP-000-1010, "Vibration Damping Materials, Procedures for Installation Maintenance and Repairs", dated June 1968.