

NOTICE OF  
CHANGE

METRIC  
MIL-STD-2138A(SH)  
NOTICE 1  
29 August 1994

MILITARY STANDARD

METAL SPRAYED COATINGS FOR CORROSION  
PROTECTION ABOARD NAVAL SHIPS (METRIC)

TO ALL HOLDERS OF MIL-STD-2138A(SH):

1. The following attached pages of MIL-STD-2138A(SH) have been revised and supersede the pages listed.

| New Page | Date           | Superseded Page | Date                     |
|----------|----------------|-----------------|--------------------------|
| 17       | 29 August 1994 | 17              | 13 May 1992              |
| 17a      | 29 August 1994 | 17              | 13 May 1992              |
| 18       | 13 May 1992    | 18              | REPRINTED WITHOUT CHANGE |

2. RETAIN THIS NOTICE AND INSERT BEFORE TABLE OF CONTENTS.

3. Holders of MIL-STD-2138A(SH) will verify that page changes and additions indicated above have been entered. This notice page will be retained as a check sheet. This issuance, together with appended pages, is a separate publication. Each notice is to be retained by stocking points until the military standard is completely revised or canceled.

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- (7) Steel pipe hanger and brackets.
- (8) Capstans and gypsy heads (except wear area).
- (9) Rigging fittings (block).
- (10) Fire station hardware.
- (11) Lighting fixtures and brackets.
- (12) Vent plenum.
- (13) Hatches, doors, and scuttles.
- (14) Fueling stations.

(c) Category III - Interior wet spaces. Aluminum coating 175 to 250 um (7 to 10 mils) thick may be applied to the following:

- (1) Decks in washrooms and waterclosets.
- (2) Pump room deck and equipment support foundations.
- (3) Fan room decks and equipment support foundations.
- (4) Water heater room decks and equipment support support foundations.
- (5) Air conditioning room decks and equipment support foundations.
- (6) Deck plate supports.
- (7) Machinery foundations.
- (8) Boiler air casings (skirts)
- (9) Turnstile.
- (10) Bilges and applicable wet spaces.
- (11) Well deck overheads.

(d) Category IV - Free flood areas. Aluminum coating 175 to 250 um (7 to 10 mils) thick may be applied to the following:

- (1) Sail of submarine.
- (2) Superstructure of submarine.
- (3) Fairwater of submarine.
- (4) Sanitary tanks interior.

4.4.6 Prohibited applications of metal spray coatings for corrosion control. Metal sprayed coatings for use in corrosion control applications are intended for selected application to steel and aluminum surfaces. Metal spray coatings for corrosion control applications shall not be used for the following:

- (a) Plastic, rubber, and painted surfaces.
- (b) Internal surfaces of components (pump casings, valves and so forth).
- (c) Copper, brass, bronze, copper-nickel, or monel surfaces.
- (d) Stainless steels, 17-4 PH, 15-4 PH.

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- (e) Surfaces subject to strong acids or bases (aircraft catapult slides).
- (f) Threads of fasteners (except for body nuts and exposed portion of body studs of valves).
- (g) Valve stems.
- (h) Within 20 mm (3/4 inch) of surfaces to be welded.
- (i) Steel alloys with yield strength greater than 827.4 megapascals (MPa) (120,000 lbs/in<sup>2</sup>).
- (j) Non-skid slip resistant deck coatings (except jet blast deflectors, see 6.6).
- (k) Internal portions of machinery lubricating and hydraulic systems.
- (l) Helo deck corrosion control coating.
- (m) Exterior underwater hull surfaces except where noted in 4.4.5 (d).

4.4.7 Maintanance and repair of metal sprayed coating systems. Any damage to the metal sprayed coating system which exposes the metal coating or exposes the substrate shall be repaired as specified in 4.4.7.1 through 4.4.7.3.

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4.4.7.1 Damage exposing the metal sprayed coating but not exposing the substrate.

4.4.7.1.1 Surface preparation, small areas. Surface preparation of small areas (less than 645 square centimeters (cm<sup>2</sup>) (100 square inches (in<sup>2</sup>))) shall be as follows:

- (a) Solvent clean as required (see 4.4.1.1).
- (b) Use 25-mm (1-inch) flexible-blade paint scraper and remove loose paint around worn or damaged area to the boundary or well bonded paint. Take care not to gouge or further damage the metal sprayed coatings.
- (c) Use a stiff handheld nonferrous bristle brush and vigorously brush away loose debris. (Do not use power tools as they will polish smooth the metal sprayed coating and may wear through the metal sprayed coating to the substrate.)
- (d) Feather a 50- to 75-mm (2- to 3-inch) collar into the undamaged area.
- (e) Lightly abrade the feathered paint area around the exposed metal sprayed coating with sand paper to provide a mechanical bonding surface for the paint primer and sealer.

4.4.7.1.2 Surface preparation, large areas. Surface preparation of large areas (greater than 645 cm<sup>2</sup> (100 in<sup>2</sup>)) shall be as follows:

- (a) Solvent clean as required (see 4.4.1.1).
- (b) Abrasive brush blast away loose paint using aluminum-oxide grit over the exposed metal spray coated area. (Use low blasting pressures sufficient to minimize abrasion and removal of metal sprayed coating, but great enough for reasonable paint removal and development of sufficient anchor-tooth pattern for sealers and topcoat paints.)
- (c) Feather a 50- to 75-mm (2- to 3-inch) collar into the well bonded paint area.
- (d) Minimize cosmetic difference between new and old paint by brush blasting or using sandpaper and repainting an area bordered by a weld bead or a structural item.

4.4.7.2 Damage exposing the metal substrate.

4.4.7.2.1 Surface preparation requiring paint touchup. Surface preparation for paint touchup shall be as follows. This procedure can be accomplished by ship's force.

- (a) Solvent clean as required (see 4.4.1.1).
- (b) Using a paint scraper, push the blade underneath the metal sprayed coating to lift off all loosely bonded metal sprayed coating until reaching a well bonded area.
- (c) Use portable disc sander with 80-mesh sandpaper and clean steel substrate to clean metal feathering 50 to 75 mm (2 to 3 inches) into the undamaged coated area.