# CHAPTER 10. SPECIAL PURPOSE COATINGS

## Section 1. GENERAL

10.1.1 SCOPE. This chapter covers specialized painting materials and their application. It also covers the painting materials and painting operations necessary to adequately finish and protect special areas and surfaces not otherwise covered in Chapters 7 through 9. However, some special coatings, areas and surfaces, which have been discussed in the above chapters, are also included in this chapter in order to cover all special conditions in one chapter.

10.1.1.1 Special Painting Materials. The following specialized coatings are discussed in this chapter. They are listed alphabetically.

Abrasion-resistant
Anti sweat
Bituminous
Coal-tar epoxy
Fire -retardant
Heat-resistant
Mildew-resistant
Nons lip
Odorless
Passive defense
Textured

10.1.1.2 Special Areas and Objects. The following areas and objects are covered in this chapter:

Air conditioning and evaporative cooling equipment
Air field landing mats
Chain link fencing
Clean rooms
Cold storage rooms
Dark rooms
Grease pits
Hot surfaces, e.g., stacks, mufflers, boilers
Radiators, piping, vents
Radioactive areas
Showers, laundries
Storage tanks, standpipes
  Water
  Oil and fuel
Underground structures, piping
Swimming pools
Waterfront bulkheads, piling

10.1.1.3 Special Substrates. The following surfaces, which generally present special problems, are also included in this chapter:

Acoustic tile
Bituminous or creosote impregnated surface

Fabric (insulation)
Glass
Plastic

10.1.2 USE OF SPECIAL PURPOSE COATINGS. The coatings discussed in this chapter are used for one or more of the following reasons:

a. To protect and decorate surfaces exposed to abnormal environments not necessarily covered in other chapters, e.g.:

Damp or wet surfaces
Hot surfaces
Underground surfaces
Surfaces continually or intermittently immersed in water or other liquids such as fuels

b. To reduce the effect of potential problems, e.g.:

Paint odors when painting in living quarters, food storage or use areas, hospitals, etc.

Excessive wear in heavy traffic areas

Condensation on cold water pipes

Accidents on slippery floors

Spread of fire

Accelerated paint failure on hot or wet surfaces

c. To maintain cleanliness and to prevent contamination of enclosed areas or contents, e.g.:

Clean or radioactive rooms

Storage tanks

d. To supply special effects, e.g..

Textured finishes

Passive defense (camouflage and tonedown)

e. To paint substrates not covered in other chapters, see 10.1.1.3.

10.1.3 CHOICE OF FINISHES. The choice of coating depends on the substrate, the environment and the type of service desired. One important factor to consider in the selection of coating is its effect on an enclosed area or stored product. The choice may be wide, e.g., an all-purpose interior or exterior finish, or it may be restrictive. In any case, use only those painting materials which are specified.

10.1.4 SURFACE PREPARATION. The quality of the surface is of utmost importance for the performance of many special-purpose coatings and the painting of special surfaces. Be sure to prepare the surface carefully and specifically for the conditions expected to be encountered. In some of the conditions discussed in this chapter, surface preparation is not necessarily the same as for usual interior and exterior painting. Review section 3 of this chapter before beginning the job.

## Section 2. TYPES OF COATINGS USED FOR SPECIAL PURPOSES

10.2.1 GENERAL. In most cases, special purpose coatings are among those already described in Chapters 7 to 9. A review and comparison of the basic types of coatings used for painting most of the special areas and surfaces covered in this chapter, as well as standard interior and exterior surfaces and floors, are fully covered in Chapter 6.

10.2.2 SPECIAL PAINTING MATERIALS. The principal painting materials used for special purposes are listed below.

10.2.2.1 Abrasion-Resistant Finishes. Abrasion-resistant finishes must be used on traffic areas (see Chapter 9) on surfaces which are subjected to such abrasive materials as sand or mud encountered near waterfront areas. These finishes are also used on surfaces subjected to frequent scrubbing, such as the need to decontaminate radioactive areas. On other than traffic areas, use one of the following finishes depending on the substrate, the environment, and the service desired.

| | |
|---|---|
| TT-G 535 | Epoxy Coating |
| TT-C-542 | Polyurethane Coatings, Moisture Curing |
| TT-C-545 | Polyester-Epoxy Coating |
| TT-C-550 | Glaze Coating |

10.2.2.2 Antisweat Coatings. Antisweat coatings are designed to prevent condensation of water on cold surfaces such as waterpipes. Condensation will occur during periods~of high humidity as is prevalent in certain sections of the country during the summer months. It will also occur in confined areas such as basements. Excessive condensation has a deteriorating effect on paint films and can result in unsightly mildew or create an electric shock hazard. For intermittent exposure to condensation use TT-C-492. For continuous exposure, use a coating prepared by embedding vermiculite (MIL-V-15196) into a binder paint (MIL-P-15144). See 10.3.2.1.

10.2.2.3 Bituminous Finishes. Coatings based on coal tar are used to protect steel which will be completely immersed or used underground. These coatings are relatively impermeable to water or ground moisture, and provide effective, economical, and long life protection. Use NAVFAC TS-09805.1, Sheet Steel Piling, Tar Coating Systems.

10.2.2.4 Coal Tar--Epoxy Finishes. These coatings provide hard tough finishes which are also used for the protection of underground steel and concrete structures. Although more expensive than bituminous finishes, they are much more resistant to wear. They can be used on interior floors and

walkways or in areas where abrasive materials, such as sand or mud, may tend to wear away the coating. Use SSPC No. 15, Coal Tar-Polyamide Epoxy Black (or Dark Red) Paint.

10.2.2.5. Fire-Retardant Paints. These paints delay the spread of fire and help confine it to its origin. To be of any appreciable value, fire-retardant paint must be applied in strict conformance to the manufacturer's instructions. These paints are not particularly durable, and their use is restricted to interim application over interior combustible surfaces, which will not be immediately replaced with noncombustible materials. Fire-retardant paints are not used in buildings containing automatic sprinkler systems. They may be applied to exterior combustible surfaces at isolated installations without fire protection facilities or available water. Use TT-P-26 on interior surfaces, TT-P-34 on exterior surfaces, and MIL-C-46081 on interior, wet or damp surfaces. However, the use of fire-retardant paints must be justified and is governed by the specific agency's criteria.

10.2.2.6 Heat-Resistant Coatings. These paints are used on surfaces having temperatures above normal. TT-E-496 will withstand temperatures up to 400° F. Use the following coatings for temperatures above 400° F:

a. Aluminum Paints: Use TT-P-28 on interior or exterior steel surfaces to withstand temperatures up to 1200° F, such as on superheated steam lines and leaders, boiler castings and drums.

b. Frit-Silicone Paints: Use MIL-P-14105, Olive Drab, on exterior steel surfaces to withstand temperatures as high as 1400° F.

10.2.2.7 Mildew-Resistant Fungi Resisting Paints. In applications where mildew is a problem (see 5.2.3.2, 5.2.7, and 10.2.2.2), it can be reduced and even eliminated either by the proper choice of paint or by the addition of a mildewcide (fungicide) to the paint. Where alternate paints are recommended for the particular area, substrate and service requirement (see Appendix D-4), choose the more mildew-resistant paint from the following types:

a. Paints Containing Zinc Oxide: Zinc oxide is fungistatic and contributes mildew resistance to paints in which its concentration is fairly high. An example is TT-P-105.

b. Hard Drying Coatings: Paints which produce relatively hard films are more resistant to mildew than softer drying paints. For example, two component paints and lacquers are more mildew resistant than air drying paints.

c. Enamels: Gloss enamels are more mildew resistant than either semi-gloss or flat finishes. The smooth surface of the enamel inhibits the growth of mildew by making it more difficult for the mildew to become attached to the coating.

Most paints can be made more resistant to mildew by the addition of a mildewcide. A number of chemical compounds including the phenyl mercurials, chlorinated phenols, and others are offered under various brand names as paint additives to combat mildew. They should be used in the concentration

recommended by the manufacturer after determining that the mildewcide and paint are compatible. As an example, tetrachlorophenol can be used at 3 to 4 ounces per gallon of paint.

Barium metaborate pigment is another type of product that serves as a mildewcide when incorporated in paints and enamels during the manufacturing process. Concentrations of 1/2 to 2 1/2 pounds per gallon are required depending on the nature of the coating material and the severity of exposure.

When painting in mildew problem areas, remove all mildew from the surface by first washing with a solution of trisodium phosphate and hypochlorite bleach to prevent mildew growth into the paint film from beneath (see 10.3.2.5). Allow the surface to dry and then apply the mildew-resistant paint.

10.2.2.8 Nonslip Coatings. These paints are designed to prevent slipping on floors and walkways including those on tank roofs and metal landing mats. They consist of the appropriate floor finish to which grit is added to supply the nonslip qualities. The grit may either be mixed into the paint just before use or the paint may be applied first followed by a broadcast application of the grit. (See 9.4.3.1 and Appendix D-l, Table 6, and Appendix D-4, Tables 17 through 19.)

10.2.2.9 Odorless Paints. Odorless paints are used where conventional paint solvent odors are obnoxious to personnel or where the odor may be picked up by food nearby. They are primarily used in hospitals, kitchens, food storage areas, occupied personnel quarters, and administration areas. Use the following paints.* Also see Appendix D-4, Tables 9 through 12 for complete paint systems.

| | | |
|---|---|---|
| Primer | TT-P-29 | Latex flat |
| | TT-P-650 | Latex primer |
| Undercoater | TT-E-545 | Odorless alkyd undercoater |
| Flat finish | TT-P-29 | Latex flat |
| | TT-P-30 | Odorless alkyd flat |
| Semigloss finish | TT-E-509 | Odorless alkyd semigloss enamel |
| Gloss finish | TT-E-505 | Odorless alkyd gloss enamel |

10.2.2.10 Passive Defense Coatings (Camouflage and Tone-Down). Passive defense paints are use only on exterior surfaces to render buildings and structures inconspicuous by blending them in with the surrounding environment. Camouflage paints have special properties which are different from conventional paints, and their use is limited to special applications. Do not use camouflage paints as substitutes for conventional paints unless given special instructions.

Camouflage paints are not covered in this manual. When the use of such paints is directed, the type of paint and application procedure will be specified. On the other hand, conventional exterior paints are used to tone down the painted structures for passive defense by making them less conspicuous.

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*Note.-Always provide adequate ventilation in confined areas regardless of the type of paint used.

The paints help to blend exposed facilities with the surrounding environment. This can be done by choosing exterior low gloss or flat finishes which blend with the colors of the surroundings.

10.2.2.11 Textured Finishes. These finishes are often used to obscure nonstructural defects or rough surfaces in concrete and plaster, to coat concrete ceilings and to protect exterior masonry against wind-driven rain. Use TT-C-555, Textured Coating System.

10.2.3 SPECIAL AREAS AND OBJECTS. The principal coatings used for painting the nonconventional areas listed in 10.1.1.2 are described below.

10.2.3.1 Air Conditioning and Evaporative Cooling Equipment. Only the metal casing or housing on packaged cooling equipment is painted. The type of equipment and environment will determine what paint system is required. See Appendix D-4, Table 11 for interior finishes and Tables 15 and 16 for exterior finishes.

10.2.3.2 Air Field Landing Mats. Coatings used on air field landing mats must be highly abrasion resistant. They must be rough enough to prevent slippage of aircraft landing when surface is wet, and fire resistant to prevent ignition from engine exhausts. They must also be durable. Use MIL-C-81346, Nonslip Deck Covering Compound.

10.2.3.3 Clean Rooms. The most important requirements for coatings to be used in clean rooms are that they be smooth, extremely washable and nonabsorbent. Gloss enamels and glaze coatings should be chosen for this purpose. Select the desired coating from Appendix D-4, Tables 9 through 12 depending on the surface painted.

10.2.3.4 Cold Storage Rooms. The major problems with cold storage rooms are moisture and mold. Do not apply vapor barriers such as high gloss enamels directly on insulation. Instead, use a breathing-type latex paint such as TT-P-19, Acrylic Emulsion Paint. For other surfaces, see Appendix D-4, Tables 9 through 12, for the desired coating depending on the surface to be painted.

10.2.3.5 Dark Rooms. Rooms for photographic operations are painted in a manner similar to that used in other rooms of similar construction. See Appendix D-4, Tables 9 through 12, for the desired coating depending on the surface to be painted.

10.2.3.6 Grease Pits. Grease pits are painted to facilitate cleaning. Coatings for these areas must be wear resistant to withstand continuous foot traffic and must be hard and tough to withstand impact from tools. They also must be impervious to liquid fuel, oil, and grease and must withstand repeated washing. Use heavy duty coatings such as the following:

| | |
|---|---|
| TT-C-535 | Epoxy coating |
| TTC-542 | Polyurethane coating, moisture curing |
| TT-C-545 | Polyester-epoxy coating |
| TT-C-550 | Glaze coating |

Use nonslip coatings on floors. See 9.4.3.1 and Appendix D-4, Tables 17 through 19.

10.2.3.7 Hot Surfaces. Hot surfaces such as stacks, mufflers, and boilers require heat resistant finishes (see 10.2.2.6).

10.2.3.8 Radiators, Piping, Vents. Use TT-E-496 for temperatures up to 400° F. See 10.2.2.6 for coatings to be used for temperatures above 400° F.

10.2.3.9 Radioactive Areas. All surfaces in radioactive areas must be smooth and free of cracks, joints or crevices. Coatings used must be extremely washable and nonabsorbent. Use high gloss or semigloss washable enamels. If the surfaces are to be decontaminated often, use abrasion-resistant, glaze-type coatings for optimum smoothness and resistance to strong decontaminating solutions and to scrubbing. See Appendix D-4, Tables 9 through 12, for interior finishes, and Appendix D-4, Table 17 through 19 for floor finishes, and Paragraph 10.2.2.1 for abrasion-resistant finishes.

10.2.3.10 Showers and Laundries. Wet areas such as showers and laundries require coatings which can withstand water, soap and detergents. Use one of the following coatings:

| | |
|---|---|
| TT-P-95 | Rubber base paint, either gloss or semigloss |
| TT-C-535 | Epoxy coating |
| TT-C-542 | Polyurethane coating, moisture curing |
| TT~-550 | Glaze coating |

See Appendix D-4, Tables 10 through 12, for complete paint systems depending on the substrate to be painted.

10.2.3.11 Storage Tanks--Water. Water will cause corrosion inside steel tanks and standpipes. This corrosion will not only destroy the tank but will affect the taste of potable water. Rust can also clog mall pipelines, valves and sprinkler heads. Always paint the inside surface of steel tanks and standpipes. Tanks should be emptied once a year, carefully inspected and either spot-painted or completely painted as necessary.

a. Exterior Surfaces: See Appendix D-4, Tables 15 and 16 for the choice of paint systems depending on the substrate and environment.

b. Interior Surfaces: Paints used for potable water must not contribute any disagreeable odor or taste to the stored water. These coating systems shall not be toxic in potable water service. Each user should clear the coating system to be used with the appropriate military service directives.

Use one of the following paint systems for steel tanks. Total film thickness should be at least 6 mils.

| | | |
|---|---|---|
| 1. | MIL-P-15328 | Wash primer |
| | + | |
| | MIL-P-15930 | Vinyl-zinc chromate primer |
| | + | |
| | VR-3 | Aluminum-vinyl resin paint finish |
| | or | |
| | SSPC Paint No. 8 | Aluminum-vinyl resin paint finish |

| | | |
|---|---|---|
| 2. | VR-3 | Vinyl Resin Paint (4 coats) |
| 3. | MIL-P-24441 | Epoxy-Polyamide Paint<br>Green--Formula 150, primer<br>Red--Formula 156, intermediate coat<br>White--Formula 152, top coat<br>(Additional epoxy systems are available which have been approved by individual services.) |
| 4. | MIL-L-2638 | Vinyl lacquer |
| 5. | NAVFAC TS-15240 | Steel Water-Storage Tanks |
| 6. | MIL-P-15145 | Zinc Dust Pigmented Enamel, Formula 102 (4 Coats at 1 mil per coat) |

See also the AWWA Standard D102 for "painting and Repainting Steel Tanks, Standpipes, Reservoirs and Elevated Tanks for Water Storage," American Water Works Association.

Concrete Tanks and Reservoirs--Use one of the following coatings or paint systems:

| | |
|---|---|
| TT-P-95 | Rubber base paint (class 1 or 2) |
| VR-3 | Vinyl resin paint (4 coats) |

10.2.3.12 Storage Tanks--Oil and Fuel. Paint exterior and interior surfaces as follows:

a. Exterior Surfaces: See Appendix D-4, Tables 14 and 15, for the choice of paint system depending on the substrate and environment. (See NAVFAC TS-09873 Exterior Coating Systems for Welded Steel Petroleum Storage Tanks.)

b. Interior Surfaces: Use the following coatings:

| | |
|---|---|
| MIL-C-4556 | Coating Kit for Steel Tanks |
| NAVFAC TS-09871 | Protective Lining for Concrete Tanks |
| NAVFAC TS-09872 | Coating System for Welded Tanks |

10.2.3.13 Underground Structures, Piping. Structures and piping installed underground must be completely protected against moisture to prevent rapid deterioration. Use a Coal Tar-Epoxy coating such as SSPC No. 16.

10.2.3.14 Swimming Pools. Painting of swimming pools makes cleaning easier and facilitates inspection for cleanliness and maintenance. It prevents spalling or flaking of the concrete, especially when the pool is drained and the surface is exposed to the atmosphere. Paint prevents corrosion of metal pools as well. Plastic pools or pools finished with tile do not require painting.

a. Concrete Pools: Use two coats of TT-P-95.

b. Metal Pools: See Appendix D-4, Table 15, for paint systems resistant to water and marine atmospheres, e.g., chlorinated rubber, vinyl and phenolic.

10.2.3.15 Waterfront Bulkheads, Piling. Bulkheads and piling may be made of wood, concrete or steel. They are subjected to either salt water spray, partial immersion, or complete immersion, depending on their location.

a. Wood: Wood bulkheads and piling are not painted. They should be pressure treated with wood preservatives. See TT-W-571, Wood Preservation: Treating Practices.

b. Concrete: Use two coats of TT-P-95 above the water line, and NAVFAC TS 15057 below the water line.

c. Steel Piers: Above water--use any system listed under "Marine or Corrosive" (moderately severe), Appendix D-4, Table 15.

Below water--use NAVFAC TS 15057. See 10.2.2.4.

10.2.4 SPECIAL SURFACES. The principal painting materials used on nonconventional surfaces are as follows:

10.2.4.1 Acoustic Tile. Acoustic tile contains holes or fissures which absorb noise, thus reducing the overall sound level in the area. Avoid painting as long as possible, since any paint will tend to clog the openings and thus reduce the efficiency of the tiles. Wash the area, if at all possible. If necessary to paint, spray one thin coat of TT-P-29.

10.2.4.2 Bituminous or Creosote Impregnated Surfaces. Surfaces and substrates, either coated with bituminous finishes or impregnated with creosote, will bleed if painted with solvent thinned paints. Use bituminous paints such as MIL-C-18480, solvent type or MIL-C-15203, emulsion type, on structures to be immersed or underground. Otherwise, use latex pain~s q~ch as 'r●T-P-29 indoors, and TT-P-19 (Acrylic) or TT-P-55 Type II (PVAc) outdoors.

10.2.4.3 Fabric. Insulation on piping, ducts, and tanks often is covered with fabric. This does not require painting indoors except for appearance. Exposed insulation must be painted if outdoors.

a. Interior Environments: Seal the fabric with a thin coat of TT-S-179 which 1 ounce per gallon of phenyl mercury oleate (10 percent mercury) is added to prevent mildew growth. Then apply the regular interior topcoat to blend with the rest of the area.

b. Exterior Environment: Use TT-P-595 to preserve the fabric.

10.2.4.4 Glass. When glass is to be painted, paint the interior side of the glass using the same top coat as in the rest of the area. Do not paint glass unless absolutely necessary.

10.2.4.5 Plastic. Do not paint plastic surfaces unless absolutely necessary. Since plastics vary considerably in composition, it is difficult to specify coatings to be used on them. Some plastics will craze if coated with paints containing strong solvents. Others do not provide a good substrate for paint adhesion. Use a high gloss enamel, since its adhesion is usually better

than semigloss enamels, flat finishes, and latex paints. If crazing is a problem, use a paint containing mineral spirits or alcohol. Test the paint in an inconspicuous area to check for crazing and adhesion before painting the entire area.

10.2.5 ACCESSORY PRODUCTS. The products used for surface preparation and repair are similar to those used for the same substrates and environments as discussed in Chapters 7 and 8. See Chapter 4, sections 4 and 5; Chapter 7, paragraph 7.2.4 and section 3; Chapter 8, paragraph 8.2.5 and section 3; and Appendix D-l, Tables 1 and 2.

10.2.6 APPLICABLE SPECIFICATIONS. The special painting materials specified are listed in Appendix D-l, Table 6. The conventional specifications are listed numerically in Appendix D-l and by substrate in Appendix D-4. For interior finishes, see Appendix D-l, Table 3, and Appendix D-4, Tables 9 through 12. For exterior finishes, see Appendix D-l, Table 4, and Appendix D-4, Tables 13 through 16. The complete list of all products specified by the military services for use on structures listed in this manual is shown in Appendix D.

## Section 3. SURFACE PREPARATION AND COATING APPLICATION

10.3.1 GENERAL. The procedures used for surface preparation and application of special coatings and of coatings used for special conditions are generally similar to those required for conventional painting. The specific variations from conventional procedures are discussed below for the application where such changes are required. In all cases, it is important that the surface be clean, dry, and in good condition for painting. The degree of surface preparation depends on the type of coating applied and the severity of the environment. It is most critical with respect to steel surfaces. (See Chapter 4, section 4.) Application can normally be done by brush, roller, or spray. (See Chapter 4, section 6 for details.)

10.3.2 SPECIAL PAINTING OPERATIONS. Use standard procedures for surface preparation and paint application except as noted below.

10.3.2.1 Antisweat Coatings. Be sure that the metal is clean and dry. Use a proper primer (see TT-C-492) before applying compound. Then apply TT-C-492 in a thick coat--approximately 250 square feet per gallon. Apply additional coats at right angles to previous coat. Allow 8 hours drying between coats. Alternatively, apply the same heavy coat of MIL-P-15144. While it is still tacky, embed the vermiculite (MIL-v-15196) into the surface of the binder. Allow 24 hours for drying, then repeat as necessary to provide the thickness needed to prevent condensation. Decorative paints may be applied over the finished coating, if desired.

10.3.2.2 Heat-Resistant Coatings. The metal must be completely free of any coating not specifically designed for high temperature application, and it must be relatively cool prior to painting. Blast clean, if possible, to obtain optimum adhesion. Apply the heat-resistant paint directly to the clean metal surface immediately after blasting. Keep dry film thickness fairly low--no more than 1.5 mils for aluminum paints and 2.5 mils for other colors. After painting, allow 48 hours before exposing the coating to heat.

10.3.2.3 Nonslip Coatings. See 9.4.3.1.

10.3.2.4 Textured Finishes. Textured finishes also contain suspended pigment so that they must be kept mixed during use and should be applied in a fairly thick coat. Avoid excessive build-up.

10.3.2.5 Cold Storage Rooms. It is important to completely remove all fungus or mildew before painting to avoid leaving any growth to attack the new paint film. Remove all stored articles, turn off the refrigerant supply to the unit and ventilate the area. Scrub the area with a solution consisting of 3 ounces (2/3 cup) trisodium phosphate, 1 ounce (1/3 cup) household detergent, 1 quart 5 percent sodium hypochlorite solution (commercially available in many household bleaches) and 3 quarts of warm water. Rinse the walls and floors to remove all cleaning materials. Then ventilate and dry completely before painting. See Chapter 7 for painting conventional walls and ceilings. For asphalt surfaces use TT-P-38, Ready Mixed Aluminum Paint. Apply TT-P-19 on exposed insulation. Do not store food products in the area until the paint is completely dry and free of solvent odor.

10.3.2.6 Showers and Laundries. Be sure to wash surfaces completely to remove all traces of soap, detergent, and mildew (see 10.3.2.5). Then ventilate the area until completely dry before painting.

10.3.2.7 Storage Tanks, Standpipes and Reservoirs. All surfaces to be painted, both interior and exterior, should be cleaned very well, preferably by blast cleaning. Cleaning of areas, which are to be continuously immersed, is especially important. Be sure to remove all dust by blowing with compressed air or by use of vacuum in enclosed areas.

a. Steel Surfaces: Steel structures must be primed whether exposed to the atmosphere or immersed in water. After priming, apply the required number of coats to achieve a total thickness of at least 5 mils. Be careful not to apply too thick a coat on surfaces to be immersed in water, and allow thorough drying before placing into service. Incompletely cured coatings can result in blistering and loss of adhesion. See AWWA Standard D102.

b. Concrete Surfaces: Be sure that the surface is absolutely dry and free of any glaze or efflorescence before painting. No special primer is required but the first coat may be thinned with 1/2 to 1 pint of the appropriate thinner per gallon of paint to aid penetration.

10.3.2.8 Underground Structures, Piping. Prepare surface and apply coatings as specified in NAVFAC TS 15057 (see also 10.2.2.4).

10.3.2.9 Swimming Pools. Follow surface preparation and application techniques outlined in Chapter 8, depending on whether the surface is concrete or metal and the finish desired. In addition, remove any mold by scrubbing with a solution of household bleach or trisodium phosphate (see 10.3.2.5). Remove all traces of these cleaning solutions by flushing with water and allow the surface to dry completely before painting.

10.3.2.10 Waterfront Bulkheads, Piling.

a. Wood: Follow instructions outlined in TT-W-571, Wood Preservation, Treating Practices.

b. Concrete or Steel: For above-water structures follow surface preparation and application techniques outlined in Chapter 8, depending on the type of surface and the selected finish. For structures which will be immersed below the water line, follow procedures included in NAVFAC TS 15057 (see also 10.2.2.4).