{METRIC}
A-A-3120
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Superseding
TT-P-95C
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COMMERCIAL ITEM DESCRIPTION

PAINT: FOR SWIMMING POOLS

The General Services Administration has authorized the use of this commercial item description by all federal agencies.

1. **SCOPE.** This commercial item description describes interior-exterior paints for use on water immersed concrete and plaster. They are designed primarily as swimming pools paints. When thinned in accordance with the manufacturer's instructions, the paint is self-priming.

2. **CLASSIFICATION.** The paint shall be of three types as specified below:

Type A - Acrylic base.
Type C - Chlorinated rubber base.
Type E - Epoxy resin.

3.3 **SALIENT CHARACTERISTICS.**

3.1 **General requirements.**

3.1.1 **Prohibited materials.** The manufacturer shall ensure that no mercury, cadmium, hexavalent chromium compounds, compounds containing pyrophosphates, known or suspected human carcinogens, (as defined by the National Toxicology Program's Annual Report on Carcinogens), or ozone depleting substances (ODS) are used in the formulation. If any of these substances is present as an impurity in a raw ingredient, its concentration shall be less than 0.1 percent by weight. The lead content of the nonvolatile portion of the coating shall not exceed 0.06 percent, by weight.

3.1.2 **Condition in container.** The coating shall be free from skins, livering, seeds, and hard settled pigment, and shall be readily dispersible to a uniform condition by five minutes of hand stirring. A closed, three-quarter filled container shall not skin within 48 hours, when stored at room temperature.

3.2 **Special requirements.** Unless otherwise stated in the test method, all routine and referee testing shall be done at the conditions specified in ASTM D 3924.

3.2.1 **Color.** The color shall be as specified in the contract or purchase order (see 7.2).

3.2.2 **Quantitative requirements.** The paint shall meet the requirements listed below and in table I. Unless otherwise specified, all tests in table I shall be performed on painted test blocks prepared as specified in 3.2.2.1 to 3.2.2.4.

Beneficial comments, recommendations, additions, deletions, clarifications, etc. and any data which may improve this document should be sent to: General Services Administration, Paints and Chemicals Center, Supply and Environmental Management Division (10FTE), 400 15th St. SW, Auburn, WA. 98001-6599.

3.2.2.1 **Cement plaster test block preparation.** Concrete plaster blocks shall be prepared in accordance with FED-STD-141 method 2051 procedure C. Dolomite sand shall be used in place of concrete sand and the cure time shall be 14 days in water instead of seven days. Do not touch or allow any oil, dirt, or grease get on the surface to be painted. After the blocks have cured and dried, they shall be acid etched using the following procedure. Pour a 10 percent hydrochloric acid solution onto the surface and brush it out with a deck brush. When the acid ceases to effervesce, after about five minutes, rinse the surface off with clean water. The surface is then scrubbed vigorously with a tri-sodium phosphate (TSP) solution, containing 230 g of technical grade TSP mixed with four liters of warm water. Afterwards, the blocks are rinsed well with clean water. The blocks are dried at room temperature for a minimum of seven days.

3.2.2.2 **Paint application type A.** Apply the first coat and allow to dry in accordance with the manufacturer's instructions. Apply the second coat in accordance with the manufacturer's directions and allow to dry at room temperature for 168 h $\pm$ 4

3.2.2.3 **Paint application type C.** Apply the first coat thinned in accordance with the manufacturer's instructions. The total dry film thickness (dft) shall be 51 µm $\pm$ 4µm (0.002 inch $\pm$ 0.0002 inch). Allow to air dry at room temperature for the time specified in table I for recoating. Apply the second coat, without diluting and in accordance with the manufacturer's directions. Allow to dry at room temperature for 168 h $\pm$ 4 h.

3.2.2.4 **Paint application type E.** Apply the first coat in accordance with the manufacturer's directions. Allow to air dry at room temperature for the time specified in table I for recoating. Apply the second coat, following the manufacturer's directions. Allow to dry at room temperature for 168 h $\pm$ 4 h.

3.2.2.5 **Appearance.** After the second coat in 3.2.2.2, 3.2.2.3, or 3.2.2.4 has dried, there shall be no evidence of lifting, blistering, pinholing, or other film irregularities

3.2.3 **Accelerated aging.** Two coated test blocks shall be exposed to accelerated weathering as described in ASTM method D 822. The filter used shall be a 3 mm Pyrex No. 7744 or other filter producing the same irradiance values. A cycle shall be four hours exposure to light and water spray, followed by 4 hours without light and water spray. The water spray shall consist of 100 percent substitute ocean water in accordance with ASTM D 1141, containing between 1.2 and 2 ppm chloride from sodium or calcium hypochlorite, maintained at a pH of 7.3 $\pm$ 0.2 with technical grades of sodium bicarbonate and sodium carbonate. The temperature of the water spray shall be 21 °C $\pm$ 5 °C (70 °F $\pm$ 9 °F). The black panel temperature shall be 63 °C $\pm$ 3 °C (145 °F $\pm$ 5 °F). Type A coatings shall be exposed for 126 hours, type C coatings for 168 hours, and type E coatings for 336 hours. After the accelerated aging, the blocks shall be removed from the chamber and the paint examined in accordance with ASTM D 4214 for chalking. Types A and C shall show no signs of chalking, (a value of 10). Slight chalking (a value of 8) is permitted with type E. The coating shall then be rinsed under running distilled water to remove any scum or dirt and air dried for two hours. There shall be no change in adhesion (see note 2, table I) or gloss change greater than 30 percent, from the original coating gloss. A barely perceptible color change is allowed.

3.3 **MSDS.** The manufacturer shall comply with requirements set forth by the Hazardous Communication Standard 29 CFR 1910.1200 (d) through (g). All Material Safety Data Sheets (MSDSs) submitted shall comply with provisions of FED-STD-313.

TABLE I

QUANTITATIVE REQUIREMENTS

Property	Value			ASTM or FED-STD-141 test method
	Type A	Type C	Type E	
Total solids, percent by volume, min.	35	32	50	D 2697
Volatile Organic Compound (VOC) content (less water and exempt solvents), g/L, max.	250	600	420	D 3960 1/
Prohibited materials, wt. Percent, max.				
Lead content nonvolatile	0.06	0.06	0.06	See note 3/
Other prohibited materials listed in 3.1.1	0.1	0.1	0.1	See note 3/
Coarse particles and skins (retained on No. 325 sieve), percent by weight of paint, max..	0.5	0.5	0.5	D 185
Viscosity, K.U.	70-90	70-90	70-90	D 562
Drying time, hours				
Set to touch, max.	1/4	2	8	D 1640
Dry to recoat,	4	24	24-48	D 1640 6/
Self lifting	None	None	None	See 3.2.2.1
Flexibility, No cracking, chipping, or flaking. cylindrical mandrel	25 mm (1.0 in) diameter	25 mm (1.0 in) diameter	25 mm (1.0 in) diameter	D 522 4/
Fungus and mold resistance	8	Not required	Not required	D 3273, D 3274
Color	Visual match	Visual match	Visual match	D 1729
Hiding power, 51µm (2.0 mil) min.	0.95	0.95	0.95	D 2805
Gloss,				
Flat, @ 85°, maximum	10	10	10	D 523
Semigloss, @ 60°	15-55	15-55	15-55	D 523
Gloss, @ 60°, minimum	70	70	70	D 523
Adhesion	3A	3A	5A	D 3359 2/
Scrub resistance, no. of cycles.	300	500	1200	see note 2/ and 5/
Package stability of paint				
Viscosity after storage, in K.U.	70-90	70-90	70-90	D 1849 and D 562
Settling after storage, max.	10	10	10	D 1849 and D 869

1/ The VOC shall be determined on the paint as applied in accordance with the manufacturer's instructions for use.

2/ Prepare three test blocks as specified in 3.2.2.2 to 3.2.2.4. Seal the unpainted surfaces with a concrete or plaster sealer. Immerse the blocks in water to such a depth as to have 6.35 mm (1/4 in) of the painted surface above the surface of the water. Allow the test blocks to remain partially immersed for 10 days; and then totally immersed in water for 48 hours. Remove and wipe dry. After three hours at room temperature, test two of the panels in accordance with ASTM D 3359. The adhesion of coated blocks exposed to the accelerated weather shall also be measured as described in ASTM D 3359. Use Scotch Brand Tape number 810 or any other cellophane tape with the same adhesive strength.

3/ For referee purposes only. Lead content shall be measured using X-Ray fluorescence, cadmium content by ASTM D 3335, chromium content by ASTM D 3718, and mercury content by ASTM D 3624. Organic solvents shall be identified using FED-STD-141 methods 7356 and 7375.

4/ Use method B. Two test panels prepared in accordance with FED-STD-141 method 2012 shall be used. The paint shall be applied without thinning to a dry film thickness 51 μm ± 4μm (0.002 in ± 0.0002 in). The coating shall air dry for 24 hours at room temperature. After air drying, heat the panels at 105 °C ± 2 °C (221 °F ± 4 °F) for three hours, and cool 1/2 hour at room temperature. Then, bend the panels as specified in D 522. The time for the panel bending shall be 0.1 to 0.2 seconds.

5/ Immerse the untested block prepared in note 2 in the TSP solution described in 3.2.2.1, maintained at 50 °C to 60 °C (122 °F to 140 °F). While immersed, scrub the painted surface with a household tampico scrubbing brush. A cycle shall be considered a complete forward and reverse stroke. When compared to one of the unscrubbed blocks used for the adhesion testing, the scrubbed block shall show no evidence of detrimental actions, such as flaking, whitening, softening, or other film irregularities. For referee purposes, the scrubbing brush shall conform to H-B-1490/3. A stroke shall be a distance of 5.1 cm to 7.6 cm (2 in to 3 in.)

4. REGULATORY REQUIREMENTS.

4.1 **Federal Acquisition Regulations (FAR).** The offeror/contractor is encouraged to use recovered materials to the maximum extent practical, in accordance with paragraph 23.403 of the FAR.

4.2 **Code of Federal Regulations (CFR).** The paint shall not contain any substance listed in 40 CFR part 61.

5. QUALITY ASSURANCE PROVISIONS.

5.1 **Contractor quality assurance.** The contractor shall maintain substantiating evidence that the product offered meets the salient characteristics of this Commercial Item Description and that the product conforms to the producer's own drawing, specifications, standards, and quality assurance practices, and is the same product offered for sale in the commercial marketplace.

The contractor shall provide the required information in a tabulated format and with enough clarity so that the formulation of the tested product can be traced compared to the offered product(s). The contractor shall also provide a summary of performance data, consisting of test reports, substantiating that the product to be supplied under this CID meets the salient characteristics cited under 3. through 3.2.3 and is the same product offered for sale in the commercial marketplace.

The government reserves the right to require proof of such conformance prior to first delivery and thereafter as may be otherwise provided for under the provisions of the contract.

6. PACKAGING.

Preservation, Packing, and marking shall be as specified in the contract or order.

7. NOTES.

7.1 **Intended use.** These coatings are intended for either interior or exterior use on concrete, plaster, and masonry surfaces and swimming pools. It is also intended for use where moisture, abrasion, mild acid, and mild alkali resistance are required.

7.1.1 **Selection of coating.**

7.1.1.1 **Type A coatings.** These coatings can be used on new or sand blasted concrete, plaster, and masonry surfaces, and surfaces previously coated with acrylic. It can be used where there are stringent restrictions on paint and coating VOCs. However, it will last only one to three years. After which, the surface must be recoated. It cannot be used over an elastomeric rubber type paint.

7.1.1.2 **Type C coatings.** These coatings can be used on new or sand blasted concrete, plaster, and masonry surfaces, and surfaces previously coated with a chlorinated rubber type coating. This is the most widely used swimming pool paint. However, it will only last two to four years. It cannot be used over acrylic or epoxy coatings.

7.1.1.3 **Type E coatings.** These coatings can be used on new or sand blasted concrete, plaster, and masonry surfaces, and surfaces previously coated with an epoxy coating. This paint is quickly replacing the chlorinated rubber type paints as the paint of choice for swimming pools. It will last five to eight years.

7.1.1.4 **Caution.** These paints should not be applied during hot sunny days. The best time to apply them is in the shade, late in the day The temperature of the substrate should be between 10 °C and 30 °C (50 °F to 85 °F). Type A, acrylics, should be applied to a damp surface. If the paint is applied and allowed to dry under direct sunlight on a hot day, the paint will not cure or dry properly. Type A, acrylics, will dry to fast and not allow the paint resin to coalesce properly. Type C, chlorinated rubber, will blister.

7.2 **Ordering Data.** Purchasers should include the following information in the contract or purchase order.

(a) Title, number, and date of this commercial item description
(b) Type, and color required.
(c) Quantity and size of the container required
(d) Address to whom MSDSs should be sent
(e) Packaging, packing, and marking required

7.3 **Bid evaluation.** Bids shall be evaluated at the price per square foot coverage at the manufacturer's recommended total dry mil thickness.

7.4 **Part Identification Number (PIN).** The following part identification numbering procedure is for government purposes and does not constitute a requirement for the contractor.

A-A-3120--AP- 25526

- **25526** — **COLOR NUMBER**
- **P** — **SIZE P = PINT**
  Q = QUART
  G = GALLON
  C = FIVE GALLON CAN
- **A** — **TYPE A = ACRYLIC, C = CHLORONATED RUBBER, E = EPOXY**
- **A-A-3120** — **A-A-3120**

7.5 **Referenced documents.**

Federal and Military Specifications:

A-A-2904 - Thinner, Paint, Mineral Spirits, Regular and Odorless.
H-B-1490/3 - Brush, Scrub, Household.

Federal Standards:

FED-STD-141 - Paint, Varnish, Lacquer and Related Materials: Methods of Inspection, Sampling and Testing.
FED-STD-313 - Material Safety Data, Transportation Data and Disposal Data for Hazardous Materials Furnished to Government Activities.

National Toxicology Program

Annual Report on Carcinogens.

ASTM Standards:

D 185 - Coarse Particles in Pigments, Pastes, and Paints.
D 522 - Mandrel Bend Test of Attached Organic Coatings.
D 523 - Specular Gloss.
D 562 - Consistency of Paints Using the Stormer Viscometer.
D 822 - Conducting Tests on Paint and Related Coatings and Materials using Filtered Open-Flame Carbon-Arc Light and Water Exposure Apparatus.
D 869 - Evaluating Degree of Settling of Paint.
D 1141 - Substitute Ocean Water.
D 1193 - Reagent Water.
D 1640 - Drying, Curing, or Film Formation of Organic Coatings at Room Temperature.
D 1729 - Visual Evaluation of Color Difference of Opaque Materials.

D 1849 - Package Stability of Paint.
D 2697 - Volume Nonvolatile Matter in Clear or Pigmented Coatings.
D 2805 - Hiding Power of Paints by Reflectometry.
D 3273 - Resistance to Growth of Mold on the Surface of Interior Coatings in an Environmental Chamber.
D 3274 - Evaluating Degree of surface Disfigurement of Paint Films by Microbial (Fungal or Algal) Growth or Soil and Dirt Accumulation.
D 3335 - Low Concentrations of Lead, Cadmium, and Cobalt in Paint by Atomic Absorption Spectroscopy.
D 3359 - Measuring Adhesion by Tape Test.
D 3624 - Low Concentrations of Mercury in Paint by Atomic Absorption Spectroscopy.
D 3718 - Low Concentrations of Chromium in Paint by Atomic Absorption Spectroscopy.
D 3924 - Standard Environment for Conditioning and Testing Paint, Varnish, Lacquers, and Related Materials.
D 3960 - Determining Volatile Organic Compound (VOC) Content of Paints and Related Coatings.
D 4214 - Evaluating the Degree of Chalking of Exterior Paint Films.

7.6 **Source of Documents.**

7.6.1 Contact the contracting officer for a copy of paragraph 23.403 of the FAR, and the appropriate paragraphs in 29 and 40 CFR.

7.6.2 Copies of ASTM specifications and standards may be obtained from the American Society for Testing and Materials, 100 Barr Harbor Drive, West Conshohocken, PA 19428-2959.

7.6.3 Copies of Federal Specifications and standards may be obtained from the Federal Supply Service Bureau, Specification Section, Suite 8100, 470 East L'Enfant Plaza, SW, Washington, DC 20407.

7.6.4 Copies of the Annual Report on Carcinogens may be obtained from the National Toxicology Program, Annual Report on Carcinogens, PO Box 12233, Research Triangle Park, NC 27709.

MILITARY INTERESTS:

Custodian
Army - CE
Navy - YD1

Review Activities:
Army - MR

CIVIL AGENCY COORDINATING ACTIVITY:

Preparing Activity:

GSA-FSS