

Buordltc Ma 36-1-AVM:ej JJ 52  
of 19 May 1953 refers.

Federal Specification TT-C-595-  
shall be used to indicate  
paint colors. O.S. 1351 shall  
no longer be used.

# SPECIFICATIONS FOR PAINTS ON EXTERIORS OF PROJECTILES PURCHASED BY THE NAVY

NAVY DEPARTMENT—BUREAU OF ORDNANCE—1-9-43

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## REVISIONS

Loc	A
No.	6115
Date	3-21-45
Changes appear on Sheets Nos.	Color Chart Revised

### A. APPLICABLE SPECIFICATIONS

None.

### B. COLORS

See Section E.

### C. MATERIALS

C-1. The materials used shall be of good commercial quality.

### D. GENERAL REQUIREMENTS

See Section E.

### E. DETAIL REQUIREMENTS

E-1. Paints on the exteriors of projectiles shall be thin, hard, lead free, films of colors to match approximately those shown on plate 1.

E-2. The thickness of the paint film shall be the least which will produce the desired color and be reasonably resistant to damage.

E-3. The surface of the projectile on which paint is applied shall be clean and dry. It shall

be free from rust, loose scale, grease, or any other substance which will impair the adhesion of the paint film.

E-4. The paint used in producing these films shall be composed of an inorganic pigment or pigments in an organic vehicle.

E-5. The composition of the paint shall be such as to produce a film which will not be softened, dissolved, or lifted by water, mineral oil, petrolatum, or petroleum spirits under the test conditions stated in section F.

### F. METHODS OF INSPECTION AND TEST

F-1 (a). Inspection shall be conducted at the place at which the painting is performed. A lot shall consist of all of the paint of one color submitted for inspection at one time. Sample portions shall be taken from 1 container from each 10 containers or fraction thereof in the lot. These individual portions shall be thoroughly mixed together to form a composite sample.

F-1 (b). When the paint is to be thinned before applying to the projectile or when two or more ingredients are to be mixed to form the paint, the sample is to be made up to the composition the paint will have when it is applied.

F-2. A sample consisting of about 2 ounces of the paint shall be forwarded to a government laboratory for analysis. Enough of the sample to provide about 10 grams of dried film shall be placed in a weighed evaporating dish or crucible and dried to constant weight. After recording its weight, the dried portion shall be heated to destroy organic matter and the lead determined in the liquid obtained by lixivating the residue with dilute nitric acid. The result of the analysis shall be reported as the percentage of lead, calculated as metallic lead, in the dried portion. If the lead content of the dried portion is greater than 0.10 percent, the paint shall be rejected.

F-3 (a). Three plaques of bare sheet steel about 2" x 4" x .019 in size shall be prepared by dressing sides with 00 emery cloth and cleaning by the method employed in cleaning the projectiles. A coat of paint of approximately the thickness of that to be applied to the projectiles shall be applied over each plaque and dried for at least twice the time required for the paint film to become hard. Lines connecting the diagonally opposite corners of the plaques shall be scratched through the paint film exposing the metal below.

F-3 (b). *Water resistance.*—One plaque shall be immersed in distilled water at room temperature for 18 hours, then removed and wiped dry by one or two firm strokes with a clean white cloth. The paint film must not lift, blister, or soften to the point of rubbing off the steel or leaving color on the cloth. The area within  $\frac{1}{8}$ " of the edge of the plaque and within  $\frac{1}{8}$ " of any hole which may be made in the plaque for convenience in handling shall be disregarded in judging the paint film.

F-3 (c). One plaque shall be smeared all over with petrolatum and stood on end in a leaning position in a beaker. The beaker containing the plaque shall be allowed to stand over night at room temperature and then placed in a hot-air oven at 135° F. for 2 hours. At the end of this exposure, the film shall not have become raised or blistered and on being wiped with firm strokes of a dry white cotton cloth immediately on removal from the oven at 135° F. shall not come off or give its color to the cloth. In this test, separa-

tion of the film at the corners or edges of the plaque is to be considered a failure of the film. The plaque shall be cleaned with petroleum-spirits and dried in preparation for the flexibility test.

F-3 (d). *Resistance to petroleum spirits.*—One plaque shall be immersed in petroleum spirits at room temperature for 1 hour, then removed and wiped with a white cloth slightly moistened with petroleum spirits. The paint shall not be raised or blistered by the immersion and shall not be rubbed off or give its color to the cloth on being wiped.

F-3 (e). After the foregoing tests have been completed, the operator, using his fingers and a firmly supported mandrel shall bend each of the plaques double around a  $\frac{1}{8}$ -inch radius with a brisk motion. The films shall show no cracking on either side of the plaque when examined by the unaided eye, without having opened out the bend.

## G. PACKAGING, PACKING, AND MARKING FOR SHIPMENT

G-1. Not applicable.

## H. NOTES












H-1. The word "paint" as used herein is to be construed to include paint, color varnish, lacquer, or other mixture of pigment and an organic vehicle applied to surfaces by means of a brush, dipping, or by spraying. (Air dry or baked finish.)

H-2. Painting of Navy projectiles is principally for identification. In general, the projectiles will be sheltered from the weather until used and a correspondingly moderate weather resistance is required of the paint. The ratio of pigment to the nonvolatile portion of the vehicle should be high enough to avoid a high gloss but there is no other requirement that the paint be nonspecular or any limitation of infrared reflectance.

H-3. This specification covers the requirements of paint on projectiles as delivered to the Navy. Details as to the paint materials purchased for the application are left to the projectile manufacturer who is responsible that the materials as applied by him shall meet the requirements of paragraphs B, C, and E above.

H-4. Paint for projectile interiors or cavities is covered by Ordnance Specification No. 1356.

H-5. Copies of this specification may be obtained from the Bureau of Ordnance, Navy Department, Washington, D. C.

		
Slate		Yellow
		
Green		Ocean Grey
		
Black		Medium Blue
		
Red		Orange
		
Purple		Light Blue
		
White		

The color calibration chart below was scanned at the same time and settings as the historic document above. It may be used to calibrate the colors in the chart.

KODAK Q-60 Color Input Target



IT8.7/2-1993  
2001:06

Q-60R1 Target for  
KODAK EKTACOLOR  
Professional Papers

