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1-GP-95P
CANCELLATION
10 November 1955

CANADIAN GOVERNMENT SPECIFICATIONS BOARD

Specification
for

PRIMER; UNDERWATER, FOR STEEL BOTTOM HULLS

CGSB Specification 1-GP-95P, dated 31 December 1951 is cancelled
as of 10 November 1955.

1-GP-95P

31 December 1951

AMENDMENT NO. 1

4 June 1952

CANADIAN GOVERNMENT SPECIFICATIONS BOARD

Provisional Specification
for

PRIMER; FOR STEEL SHAFTS, "A" BRACKETS AND RUDDERS

Change title to read: PRIMER; UNDER WATER, FOR
STEEL BOTTOM HULLS

Clause 1 Definition: Delete and add new Definition:

This specification forms a part of Specification 1-GP-96P: Paint; Under Water, Anti-fouling for Steel Bottom Hulls, and applies to priming paint suitable for use as a base coat under materials by Specification 1-GP-96P. When the two materials are applied, the system shall be suitable for the protection of steel hulls subject to continuous immersion in aerated salt water.

31 December 1951

1-GP-95P*

CANADIAN GOVERNMENT SPECIFICATIONS BOARD

*Provisional Specification
for

PRIMER; FOR STEEL SHAFTS, "A" BRACKETS AND RUDDERS**

1. Definition

This specification forms a part of Specification 1-GP-96P: Paint; Anti-Fouling, for Steel Shafts, "A" Brackets and Rudders, and applies to priming paint suitable for use as a base coat under materials described by Specification 1-GP-96P. When the two materials are applied, the system shall be suitable for the protection of "A" Brackets, Propeller, Shafts, Rudders and other such areas subject to continuous immersion in aerated salt water.

2. General

(a) The underwater primer shall consist primarily of an iron oxide and zinc chromate pigment adequately milled with a suitable vehicle modified with chlorinated rubber to meet the requirements of this specification.

(b) The primer shall be supplied as a paint base with suitable amount and type of reducer so that when mixed in accordance with the instructions on the label, the material shall be suitable for application by brushing and/or by spraying.

There will be a clear statement on the label of each container regarding the proportions by volume of the components to be used for both methods of application, and also instructions that the first coating application of the material must be applied by brushing.

* This provisional specification has been issued for the immediate procurement needs of the Naval Service. It has not been formally approved by the Committee on Specifications for Paints, Pigments and Related Commodities nor the Canadian Government Specifications Board.

** For detailed information on the proper methods of application of marine paints, see 1-GP-62: Manual of Instructions for the Pretreatment and Painting of H.M.C. Ships (Formerly designated NCC 109).

(c) The primer when supplied prepared for use with a suitable amount and type of reducer, must be in such condition that stirring easily produces a uniform paint of good spraying*** or brushing consistency as required.

(d) The underwater primer, when dry, shall have a smooth finish free from wrinkling or sagging and shall be suitable for the subsequent application of approved Anti-Fouling paints.

(e) References to the CGSB Specifications in this specification shall be the issue in effect on the date of invitation for bids.

3. Flash Point

The Pensky-Martens flash point of the primer shall not be less than 10°C (50°F).

Method 3.1

4. Viscosity

The viscosity of the primer as received shall not be more than 67 Krebs Units as determined with the Stormer Viscosimeter.

Method 4.5

5. Drying Time

The primer shall dry in not more than 2 hours.

Method 5.1

6. Color

The underwater primer shall be supplied in two colors to distinguish between first and second coating applications where applicable as follows:

Color A - first coat; red iron oxide color as produced by the required pigments of this specification.

Color B - second coat; dark red iron oxide color produced by the sufficient addition of carbon black or lamp black to Color A material to produce a shade decidedly deeper than Color A.

*** The requirements of this specification apply to the primer of spraying consistency, unless otherwise specified.

7. Hiding Power

The primer shall hide a contrasting surface entirely when applied at a coverage of 400 square feet per gallon.

Method 14.1

8. Coarse Particles

The primer shall not contain more than 0.2 per cent of the material retained on a 74 micron sieve nor more than 2.0 per cent of material retained on a 44 micron sieve.

Method 15.1

9. Fineness

The fineness shall be not less than 5 when measured by the specified gauge.

Method 16.1

10. Non-Volatile Content

The non-volatile content of the primer as received shall not be less than 70 per cent by weight.

Method 18.2

11. Non-Volatile Vehicle

The non-volatile vehicle shall comprise not less than 35 per cent by weight of the non-volatile content of the primer.

Method 19.1

12. Resistance to Self Lifting

One coat of primer applied to a steel surface primed 2 hours previously with one coat of the same primer shall cause no lifting or appreciable softening of the first coat. After 24 hours there shall be no appreciable difference in the adhesion of the films produced by one and two coat applications of the primer.

Method attached

13. Pigment Composition

The pigment composition of the primer shall be as follows:

Red iron oxide (Fe_2O_3) per cent by weight of pigment, min.	15.0	Method 50.11
Zinc Chromate Yellow, ($\text{K}_2\text{O} \cdot 4\text{ZnO} \cdot 4\text{CrO}_3 \cdot 3\text{H}_2\text{O}$) per cent by weight of pigment, min.	20.0	Method 50.12
Extender, per cent by weight of pigment, max.	65.0	

14. Chlorinated Rubber Content

The chlorinated rubber content of the non-volatile vehicle shall not be less than 8 per cent nor more than 12 per cent by weight.

Method attached

15. Keeping Qualities*

The material as received, and for six months thereafter, shall not be caked in the containers, and shall be readily stirred to a homogeneous condition.

16. Qualification

(a) The primer shall be considered satisfactory and given complete approval after it has successfully complied with all of the requirements of this specification and those applicable requirements of specification 1-GP-96P.

(b) The primer shall become eligible for Interim Approval if it conforms to all the requirements of this specification and the applicable requirements of specification 1-GP-96P except for the Long Term Performance test of one year of practical underwater exposure. Failure to meet the one year underwater test will disqualify the manufacturer. Information as to the procedure for qualification of paints under this specification may be obtained from the Secretary, Canadian Government Specifications Board, National Research Council, Ottawa, Canada.

* This is not an inspection requirement.

(c) The purchaser reserves the right to reject any bids on materials to this specification which have not been subjected to the required qualification tests and found satisfactory.

(d) A previously qualified or disqualified product in which any change has been made must be requalified as a new material.

(e) Failure to meet the Long Term Performance requirement of the specification will result in cancellation of Interim Approval until the Long Term Performance has been passed.

17. Methods of Sampling and Testing

(a) The method of sampling shall be done in accordance with Section 1.1 of Schedule 1-GP-71: Methods of Testing Paints and Pigments.

(b) The methods of testing shall, in all cases, be those described in the same schedule (or attached hereto), using the method specified in each requirement.

Correspondence regarding this specification should be addressed to the Secretary, Canadian Government Specifications Board, National Research Council, OTTAWA, Canada.

TEST METHODSRESISTANCE TO LIFTING

A panel of SAE 1010 mild cold rolled steel of any convenient thickness properly cleaned and free from oil and grease is brushed with paint or primer as specified, so as to yield a dry film thickness of 40 to 50 microns. After allowing the film to dry the specified length of time, a second coat is applied to half of the panel by spray application so as to yield a second dry film thickness of 30 to 40 microns over half of the panel. The panel is immediately examined for wrinkling, crawling, or other such indication that the first coat has been materially disturbed by the application of the second coat. The panel is again examined after 24 hours.

METHOD FOR DETERMINING CHLORINATED RUBBER CONTENT

Weigh a 10 gram sample of the paint into a centrifuge jar and after adding 50 ml. of benzene with thorough stirring, centrifuge for 30 minutes at 4000 RPM. Decant and pour the supernatant liquid into a weighed beaker containing 150 ml. of mineral spirits. Evaporate off the benzene on steam bath and decant off the mineral spirits. Evaporate the remaining liquids to dryness and weigh the precipitate as chlorinated rubber.

Calculate per cent chlorinated rubber in the non-volatile vehicle by the following equation:

$$\text{per cent Chlorinated Rubber} = \frac{\text{Weight Precipitate} \times 100}{\text{Weight Sample} \times \text{per cent non-volatile content.}}$$