

Canadian General Standards Board

CGSB

Office des normes générales du Canada

ONGC

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**CANADIAN GENERAL
STANDARDS BOARD**

**OFFICE DES NORMES
GÉNÉRALES DU CANADA**

ALUMINUM MARINE PAINT

PEINTURE MARINE À L'ALUMINIUM

This standard is hereby withdrawn. Its content is covered in CAN/CGSB-1.207-98, Low-Temperature Curing Epoxy Coating.

Cette norme est retirée par le présent avis. Son contenu fait l'objet de CAN/CGSB-1.207-98, Revêtement aux résines époxydiques durcissant à basse température.

Canada

NATIONAL STANDARD OF CANADA

CAN/CGSB-1.93-92

Supersedes 1-GP-93M

Aluminum Marine Paint



QUALITY

Canadian General Standards Board

CGSB

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Although the intended primary application of this standard is stated in its Scope, it is important to note that it remains the responsibility of the users of the standard to judge its suitability for their particular purpose.

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The Secretary
Canadian General Standards Board
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The principal objectives of the Council are to foster and promote voluntary standardization as a means of advancing the national economy, benefiting the health, safety and welfare of the public, assisting and protecting the consumer, facilitating domestic and international trade, and furthering international co-operation in the field of standards.

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The responsibility for approving National Standards of Canada rests with the:

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K1A 1G6

in Person — Place du Portage III, 9C1
11 Laurier Street
Hull, Quebec

ALUMINUM MARINE PAINT

The Department of National Defence administers a Qualification Listing Program for products conforming to the requirements of this standard. Further information on the listing program is available from the Director of Engineering and Maintenance Planning and Standardization (DEMPS 4) Ottawa, Canada K1A 0K2.

Prepared by the

Canadian General Standards Board 

Approved by the

Standards Council of Canada 

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Acknowledgment is made for the French translation of this National Standard of Canada by the Translation Bureau of the Department of the Secretary of State.

CANADIAN GENERAL STANDARDS BOARD

ALUMINUM MARINE PAINT

1. SCOPE

- 1.1 This standard applies to ready-mixed aluminum paint suitable for marine application to the interiors of feed and ballast tanks and to exterior metal surfaces.
- 1.2 For more detailed information on intended uses, see par. 7.2.
- 1.3 The testing and evaluation of a product against this standard may require the use of materials and/or equipment that could be hazardous. This document does not purport to address all the safety aspects associated with its use. Anyone using this standard has the responsibility to consult the appropriate authorities and to establish appropriate health and safety practices in conjunction with any existing applicable regulatory requirements prior to its use.

2. APPLICABLE PUBLICATIONS

- 2.1 The following publications are applicable to this standard:

- 2.1.1 Canadian General Standards Board (CGSB)

- 1-GP-4 — Thinner, Petroleum Spirits
 - CAN/CGSB-1.22 — Aluminum Pigment Powder for Paint
 - CAN/CGSB-1.24 — Aluminum Pigment Paste for Paint
 - 1-GP-48 — Primer, Marine, for Steel
 - 1-GP-71 — Methods of Testing Paints and Pigments
 - 1-GP-99 — Varnish, Phenolic Resin, Exterior and Marine
 - 1-GP-125 — Paint, Priming, Marine, for Wooden Hulls
 - CAN/CGSB-1.132 — Zinc Chromate Primer, Low Moisture Sensitivity
 - CAN/CGSB-8.2 — Sieves, Testing, Woven Wire, Metric.

- 2.1.2 Department of Consumer and Corporate Affairs

- Hazardous Products Act.

- 2.1.3 ASTM

- D 185 — Test Methods for Coarse Particles in Pigments, Pastes, and Paints
 - D 1200 — Test Method for Viscosity of Paints, Varnishes, and Lacquers by Ford Viscosity Cup.

- 2.2 Reference to the publications in par. 2.1.1 and 2.1.3 and to other related standards is to the latest issues, unless otherwise specified by the authority applying this standard. The sources of all publications are shown in the Notes section.

3. GENERAL REQUIREMENTS

- 3.1 Paint to this standard shall consist of powder conforming to CAN/CGSB-1.22, or paste conforming to CAN/CGSB-1.24, leaving aluminum pigment adequately dispersed in a varnish vehicle conforming to CGSB standard 1-GP-99.

- 3.2 The paint shall be supplied in brushing consistency and shall be suitable for use by spraying when reduced with thinner conforming to CGSB standard 1-GP-4 in accordance with the manufacturer's instructions.
- 3.3 The paint shall not skin, gel, thicken excessively or cake in the original unopened container for one year from the date of shipment when stored at temperatures not exceeding 40°C. At the end of this time, it shall be readily mixed to a uniform condition by stirring and shall meet the requirements for drying time as specified in par. 4.3 and applicability and appearance as specified in par. 4.16.

4. DETAILED REQUIREMENTS

Paint to this standard shall comply with the following detailed requirements:

		Test Method			
		Min.	Max.	CGSB 1-GP-71	ASTM
4.1	Flash point, Pensky-Martens closed cup, °C	30	—	3.1	—
4.2	Consistency, No. 4 Ford cup, s	30	40	—	D 1200
4.3	Drying time, h			5.1	—
	Set-to-touch	—	4		
	Dry hard	—	18		
4.4	Hiding power, m²/L	20	—	14.1	—
4.5	Coarse particles retained on 45 µm (No. 325) sieve*, % by mass	—	0.5	—	D 185
4.6	Volatile matter, % by mass	—	50	—	—
4.7	Pigment content, % by mass	15	—	21.1	—
4.8	Total reflectance, %	65	—	39.1	—
4.9	Pressure build-up, kPa	—	2.9	87.2	—

*See standard CAN/CGSB-8.2.

- 4.10 **Skinning Properties** — The paint shall be nonskinning when tested in accordance with CGSB standard 1-GP-71, Method 10.1.
- 4.11 **Stability** — After aging 5 d in a closed container at 45°C, the paint shall be readily mixed by simple stirring and shall yield a film complying with the reflectance requirement of par. 4.8, when tested in accordance with CGSB standard 1-GP-71, Method 30.4.
- 4.12 **Water Resistance** — A film of paint immersed 72 h in water at 23 ± 2°C, and a second film of paint immersed 1 h in boiling water shall show no blistering, peeling, wrinkling nor lifting. After subsequent drying for 2 h, the films shall show no darkening, softening, loss of adhesion nor other visible defects when tested in accordance with CGSB standard 1-GP-71, Method 110.1.
- 4.13 **Flexibility** — The dry paint shall not crack or peel when subjected to the bending test using a 6.4 mm diameter mandrel when tested in accordance with CGSB standard 1-GP-71, Method 119.5.
- 4.14 **Accelerated Weathering Resistance** — A film of the paint shall withstand an exposure period of ten 24 h cycles in an accelerated weathering machine with no appreciable colour change and without blistering, checking, cracking, flaking or other film defects. Some discolouration and water spotting shall be disregarded when tested in accordance with CGSB standard 1-GP-71, Method 122.6.
- 4.15 **Salt Spray Resistance** — There shall be no corrosion when two coats of paint are applied to steel, to a total dry thickness of 45 ± 5 µm, and exposed to salt spray for 21 d when tested in accordance with CGSB standard 1-GP-71, Method 129.2.

4.16 **Applicability and Appearance**

- 4.16.1 **Brush Application** — When brushed on a steel panel at a dry film thickness of $25 \pm 3 \mu\text{m}$, the dried paint film shall be free from sagging, streaking or other defects. The paint shall give a smooth continuous coating having good leafing, luster and general appearance when tested in accordance with CGSB standard 1-GP-71, Method 134.8.
- 4.16.2 **Spray Application** — When sprayed on a steel panel at a dry film thickness of $25 \pm 3 \mu\text{m}$, the dried paint film shall be free from sagging, streaking or other defects. The paint shall give a smooth continuous coating having good leafing, luster and shall be free from orange peel or mottling when tested in accordance with CGSB standard 1-GP-71, Method 134.14.

5. **PREPARATION FOR DELIVERY**

- 5.1 Unless otherwise specified (par. 7.1), normal commercial packaging, packing and marking shall be acceptable.
- 5.2 **Toxic Elements** — This paint shall be labelled to conform to the requirements of the Hazardous Products Act in respect to designated toxic elements.
- 5.3 **Labelling** — In addition to complying with the labelling requirements of any relevant Acts or Regulations, each container shall be suitably labelled to show the following information:
- Name of material
 - Standard number: CAN/CGSB-1.93-92
 - NATO stock number (when required)
 - Manufacturer's name and address
 - Manufacturer's batch number
 - Manufacturer's code number
 - Date of manufacture
 - Thinning instructions for spraying using the thinner conforming CGSB standard 1-GP-4.

6. **INSPECTION**

- 6.1 **Sampling** — Sampling shall be carried out in accordance with CGSB standard 1-GP-71, Method 1.1.

7. **NOTES**

- 7.1 **Option** — The following option must be specified in the application of this standard:
- a. Packaging, packing and marking details, if normal commercial practice is not suitable (par. 5.1).
- 7.2 **Intended Uses**
- 7.2.1 Paint to this standard is intended for use on exterior surfaces as topcoat over primer conforming to CGSB standard 1-GP-48. It is also intended for use as the internal coating in reserve feed water, main feed water, overflow and drain tanks. In painting such tanks, the paint may be applied directly to bare, clean metal.
- 7.2.2 In some instances this paint may also be used as a topcoat over primers conforming to CGSB standards 1-GP-125 and CAN/CGSB-1.132.
- 7.2.3 Under less severe conditions, aluminum paint conforming to CGSB standard 1-GP-69 may be used.
- 7.3 **Related Publication** (as to use)
- 7.3.1 CGSB Standard 1-GP-69 — Paint, Aluminum.
- 7.4 **Sources of Referenced Publications**
- 7.4.1 The publications referred to in par. 2.1.1 and 7.3.1 may be obtained from the Canadian General Standards Board, Sales Unit, Ottawa, Canada K1A 1G6. Telephone (819) 956-0425 or 956-0426. Fax (819) 956-5644.

- 7.4.2 The publications referred to in par. 2.1.2 may be obtained from the Canada Communication Group, Publishing, Ottawa, Canada K1A 0S9. Telephone (819) 956-4802.
- 7.4.3 The publications referred to in par. 2.1.3 may be obtained from ASTM, 1916 Race Street, Philadelphia, PA 19103, U.S.A. or from Standards Council of Canada, Standards Sales Branch, 45 O'Connor Street, Suite 1200, Ottawa, Ontario K1P 6N7.
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