



# CANADIAN GOVERNMENT SPECIFICATIONS BOARD

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SPECIFICATION

FOR

ENAMEL: ALKYD, RED 209-101

1-GP-29d

9 AUGUST 1968

SUPERSEDES 1-GP-29C

11 AUGUST 1961

THIS SPECIFICATION HAS BEEN PREPARED BY A GOVERNMENT —  
INDUSTRY COMMITTEE TO COMPLY WITH THE SPECIFIC REQUIREMENTS  
OF THE FEDERAL GOVERNMENT. IT IS INTENDED FOR USE IN A PRO-  
CUREMENT SYSTEM THAT INCLUDES INSPECTION PROCEDURES TO  
ENSURE COMPLIANCE WITH THE REQUIREMENTS OF THE SPECIFICA-  
TION AND ITS USE WITHOUT SUCH INSPECTION PROCEDURES MAY  
NOT BE ADVISABLE.

THIS SPECIFICATION APPLIES TO DURABLE WATER-RESISTANT ENAMEL SUITABLE FOR  
EXTERIOR AND INTERIOR USE.

DEPARTMENT OF DEFENCE PRODUCTION, OTTAWA, CANADA

COMMITTEE ON PAINTS, PIGMENTS AND RELATED COMMODITIES

and

Subcommittee on Construction and Maintenance

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Specification  
for

ENAMEL: ALKYD, RED 209-101

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1. DEFINITION

- 1.1 This specification applies to durable water-resistant enamel suitable for exterior and interior use.
- 1.2 For more detailed information on uses, see par. 8.1.

2. APPLICABLE PUBLICATIONS

- 2.1 The following publications are applicable to this specification:
- 2.1.1 CGSB 1-GP-12c, Standard Paint Colors.
- 2.1.2 CGSB 1-GP-71, Methods of Testing Paints and Pigments.
- 2.1.3 ASTM Standards on Paint, Varnish, Lacquer and Related Products.
- 2.2 Reference to the above publications or to test methods therein, and to other specifications, is to the issues in effect on the date of invitation to tender, unless otherwise specified.

3. CLASSIFICATION

- 3.1 The enamel shall be supplied in one class.

4. GENERAL REQUIREMENTS

- 4.1 The enamel shall consist of commercially pure toluidine red toner (medium) pigment adequately dispersed in a medium-length oil-modified alkyd resin together with the necessary thinners and driers.
- 4.2 The enamel as supplied shall be suitable for brushing and shall be satisfactory for spraying when reduced with 1-GP-4 thinner in accordance with the manufacturer's instructions.
- 4.3 The enamel shall have good brushing, flowing and levelling properties. When either brushed or sprayed, it shall dry to a smooth glossy film without running or sagging.

4.4 The enamel shall not skin, thicken excessively or cake in the original unopened container for one year from date of shipment when stored at a temperature not exceeding 100°F (38°C). At the end of this time it shall be readily mixed to a uniform condition by stirring and shall meet the applicability and appearance requirements in par. 5.18.

## 5. DETAIL REQUIREMENTS

Enamel to this specification shall comply with the following detail requirements:

|        |                                                                                                        |     |     | Test Method |       |
|--------|--------------------------------------------------------------------------------------------------------|-----|-----|-------------|-------|
|        |                                                                                                        | Min | Max | 1-GP-71     | ASTM  |
| 5.1    | Flash Point, P.M. Closed Cup, °F                                                                       | 95  | -   | 3.1         | -     |
|        | °C                                                                                                     | 35  |     |             |       |
| 5.2    | Consistency, Krebs units                                                                               | 70  | 80  | 4.5         | -     |
| 5.3    | Drying Time, hr                                                                                        |     |     | 5.1         |       |
| 5.3.1  | Dry-to-touch                                                                                           | -   | 4   |             |       |
| 5.3.2  | Dry-hard                                                                                               | -   | 18  |             |       |
| 5.4    | Gloss, units                                                                                           | 85  | -   | 13.1        | -     |
| 5.5    | Fineness of Grind, Hegman                                                                              | 6   | -   | -           | D1210 |
| 5.6    | Volatile Matter, % by wt                                                                               | -   | 53  | 17.1        | -     |
| 5.7    | Pigment Content, % by wt                                                                               | 12  | -   | 21.1        | -     |
| * 5.8  | Water Content, % by wt                                                                                 | -   | 0.5 | 24.1        | -     |
| 5.9    | Phthalic Anhydride, % by wt of nonvolatile vehicle                                                     | 30  | -   | 57.1        | -     |
| 5.10   | Sward Hardness, units                                                                                  | 10  | -   | 116.1       | -     |
| 5.11   | Rosin and Rosin Derivatives, % of NVV                                                                  | -   | 3.0 | 60.2        | -     |
| 5.12   | <u>Skinning Properties</u> - The enamel shall be nonskinning.                                          |     |     |             |       |
|        | Method 10.1                                                                                            |     |     |             |       |
| 5.13   | <u>Color</u> - The color of the enamel shall be Red 209-101 of CGSB 1-GP-12c.                          |     |     |             |       |
| 5.14   | <u>Pigment Composition</u>                                                                             |     |     |             |       |
| 5.14.1 | The ash content of the pigment shall be not more than 2 per cent.                                      |     |     |             |       |
| 5.14.2 | The chloroform solution of the pigment shall not give a blue color with alcoholic potassium hydroxide. |     |     |             |       |

Method ASTM D970

\* This requirement shall be checked at the discretion of the testing authority.

5.15 Water Resistance - The dried enamel film shall withstand immersion in water at  $73 \pm 3.5^{\circ}\text{F}$  ( $23 \pm 2^{\circ}\text{C}$ ) for 18 hours without blistering, lifting, peeling or wrinkling when examined immediately. After subsequent drying for 2 hours, the film shall show not more than a slight change in color and gloss, and no softening nor other visible defects.

Method 110.1

5.16 Flexibility - The dried enamel film shall show no cracking nor peeling when subjected to the bending test at  $73 \pm 3.5^{\circ}\text{F}$  ( $23 \pm 2^{\circ}\text{C}$ ) using a 1/8 inch mandrel.

Method 119.1

5.17 Accelerated Weathering Resistance - The dried enamel film shall withstand an exposure period of fifteen 24-hour cycles in a twin-arc accelerated weathering machine, without showing evidence of bronzing, chalking, checking, cracking, or more than a slight color change. The gloss after weathering shall be not less than 60 units.

Method 122.6

5.18 Applicability and Appearance - A brush-out of the enamel obtained as directed in the prescribed method shall confirm that the enamel complies with the following requirements:

5.18.1 The enamel shall exhibit complete hiding. The contrast "X" mark shall not be discernible when the panel is viewed in normal daylight from a distance of 5 feet.

5.18.2 The enamel shall have suitable consistency and good brushing properties, i. e., good flow-out with absence of ridges, sagging and brush marks.

5.18.3 The enamel shall not have an objectionable odor during and after application and shall have satisfactory recoat and drying times. There shall be no lifting, wrinkling, lack of uniformity, nor other film defects.

5.18.4 The resultant film shall be free from coarse particles and shall be uniform in appearance and gloss. The "lap-in" area shall exhibit uniformity with the rest of the panel.

Method 134.1

## 6. PREPARATION FOR DELIVERY

6.1 Unless otherwise specified commercial packaging, packing and marking shall be acceptable.

6.2 Labelling - In addition to the labelling requirements of any relevant Acts or Regulations, each container shall be suitably labelled with the following information:

Manufacturer's Name and Address

Name of Material

CGSB Specification No.

Qualification No. (when required)

Manufacturer's Batch No.

Manufacturer's Code No.

Date of Manufacture

Thinning Instructions for Spraying using 1-GP-4 Thinner.

## 7. INSPECTION

- 7.1 Sampling - Sampling shall be carried out in accordance with Method 1.1 of CGSB 1-GP-71.
- 7.2 Testing - The methods of test shall be as specified with each requirement.
- 7.3 Classification of Tests - Tests for determining compliance with this specification shall be classified as follows:
- 7.3.1 Qualification Tests - Those tests that are performed on samples submitted for qualification as a satisfactory product. They shall consist of all the tests necessary to establish compliance with the requirements of this specification.
- 7.3.2 Lot Acceptance Tests - Those tests that are used to determine the acceptability of a lot or batch of a qualified product. The inspecting authority may request the testing of the material for compliance with any of the requirements of this specification and may reject a lot or batch on the basis of any requirement in the specification.

## 8. NOTES

- 8.1 Intended Uses
- 8.1.1 Enamel purchased to this specification is for use as exterior and interior topcoats where a bright red enamel is required.
- 8.1.2 For exterior use on steel, the enamel is intended to be applied over 1-GP-40 or 1-GP-140 primer. Red-lead-in-oil 1-GP-14 primer may also be used if sufficient time is allowed for drying before topcoating. Such systems may be exposed to weathering, or intermittent or total immersion in fresh or salt water for short periods (7 months or less). Particular uses are buoys and post office boxes.
- 8.1.3 When repainting ferrous surfaces, remove all loose rust or loose paint by wire brushing, scraping or other suitable means followed by spot priming with 1-GP-40 primer before topcoating.
- 8.1.4 For exterior use on previously unpainted wooden surfaces, apply one coat of 1-GP-55 or 1-GP-189 primer followed by two coats of the enamel. On previously painted wood surfaces apply one or two coats as necessary when there are no film defects. If blistering, cracking or flaking has occurred, wire brush or scrape areas of failure and spot prime with 1-GP-55 primer before application of the enamel. Allow the 1-GP-55 primer to dry at least 48 hours before application of the enamel topcoat.
- 8.1.5 For interior application, the enamel may be used in a similar manner to any interior enamel where a specific bright red is desired. Particular applications are kitchen or bathroom trims, pipe identification, etc.
- 8.1.6 For interior application on previously unpainted wood surfaces, apply one coat of 1-GP-38 enamel undercoater before topcoating. When used on plaster or wallboard, apply one coat of 1-GP-68 or 1-GP-119 primer-sealer before topcoating.

8.2 Ordering Data - Purchasers should specify packaging, packing and marking details if commercial practice is not suitable; and if a qualified product is required.

8.3 Qualification

8.3.1 Qualification Procedure - Details regarding the procedure for qualification of 1-GP-29 enamel may be obtained from:

Chief, Testing Laboratories,  
Department of Public Works,  
Ottawa, Canada.

8.3.2 Qualified Products - Federal Government departments and agencies may also obtain information from the above address regarding availability of qualified products.

8.4 Related CGSB Specifications

8.4.1 For Exterior Colors

1-GP-59, Enamel: Exterior, Gloss, Alkyd Type.

8.4.2 For Interior Colors

1-GP-60, Enamel: Interior, Gloss, Alkyd Type.

8.5 The publications referred to in par. 2.1.1 and 2.1.2 are obtainable from the Canadian Government Specifications Board.

8.6 The publication referred to in par. 2.1.3 is obtainable from the American Society for Testing and Materials, 1916 Race Street, Philadelphia, Pa., 19103, U.S.A.

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Correspondence regarding this specification should be addressed to the Canadian Government Specifications Board, c/o Department of Defence Production, Ottawa 4, Canada.