



## Specifications For Manufactured Materials

Section: TRAFFIC PAINT

Subject: CONVENTIONAL ALKYD -  
WHITE AND YELLOW

### 1. SCOPE

This specification covers the requirements for white and yellow conventional alkyd traffic paint, suitable for airless and conventional spray application on bituminous highways for marking traffic lines.

Prequalification testing for next year's production traffic paint is performed in the current year.

### 2. GENERAL REQUIREMENTS

This specification specifies the most efficient traffic paint possible with regard to service and cost. Service includes general appearance, colour, night visibility, and durability. The composition of the paint shall be left to the discretion of the manufacturer, and it is their responsibility to formulate and produce a paint meeting the requirements specified herein.

Reflectorization of the paint lines will be obtained by the introduction of overlay-type glass beads during paint application. The application rate will be 550 grams of glass beads per litre of paint sprayed on the road surface.

The glass beads will be introduced or applied to the wet paint film by means of guns and under air pressure.

#### 2.1. Uniformity

The paint shall be homogenous and shall be well dispersed to a uniform and smooth consistency.

The paint shall be capable of easy application with an automatic spray gun. It shall flow evenly and smoothly without overspray, between 40° C to 60° C, using the internal atomization or airless spray.

#### 2.2. Storage Stability

The paint shall not cake, liver, curdle, gel, thicken excessively, settle badly or show any objectionable properties for six months from date of delivery, in the original unopened container when stored at a temperature not exceeding 40° C. At the end of this time, it should be capable of being mixed without difficulty to a uniform condition by simple stirring .

Section:

TRAFFIC PAINT

Subject:

CONVENTIONAL ALKYD - WHITE AND YELLOW

## 2.3. Colour

After drying, the paint shall be free from dirt or tint, and shall match the colours specified in Section 3.4 - Colour.

## 2.4. Packaging

The paint shall be packaged in 20 litre pails with removable tops. Pails shall be sturdy enough to withstand rough handling when filled with paint. All drums shall be new. Each pail shall be numbered in consecutive order and shall be plainly marked showing quantity of content, lot and/or batch number, name and address of manufacturer, manufacturer's code number for the paint and date of packaging.

Colour of paint shall be clearly identified on each pail.

## 2.5. Samples

Each prospective bidder shall submit one four litre can and three one litre cans of the paint he proposes to furnish at no charge to the Department. All samples MUST be plainly marked showing manufacturer's name and code number.

Only those manufacturers whose samples meet all the requirements of this specification shall be considered for eligibility to tender.

Manufacturers may submit up to three different samples of each formula for each colour.

Samples shall be delivered to:

Saskatchewan Highways and Transportation  
Engineering Services Branch  
Testing Services  
1610 Park Street  
Regina, Saskatchewan  
S4P 3V7

not later than 4:00 PM, May 31st of each year, unless an extension has been granted by the Department. Failure to receive samples by the specified date and time may be considered sufficient cause for rejection of the sample.

Section:

TRAFFIC PAINT

Subject:

CONVENTIONAL ALKYD - WHITE AND YELLOW

## 2.6. Acceptance and Rejection

Paint furnished under contract shall be identical to the sample submitted for performance tests and subsequently approved. In the event that the traffic paint does not comply with these specifications, or is not identical with the sample approved, the manufacturer shall be required to replace all such paint at his own expense, including all handling and transportation.

Supplier may be required to supply production quantities of paint prior to acceptance of total order for evaluation of drying characteristics as outlined in specification requirements under Section 3.5 - Drying Properties.

## 2.7. Late Delivery

If the Department's Pavement Marking Program is jeopardized by late deliveries, the Department retains the option to cancel the contract and procure material from alternate prequalified suppliers.

## 3. SPECIFIC REQUIREMENTS

### 3.1. Hiding Power

It shall flow evenly and smoothly and cover solidly in one coat when applied at a rate of 6.15 m<sup>2</sup> per litre when tested using a PFUND CRYPTOMETER.

### 3.2. Viscosity

The viscosity of the paint shall be 80-95 Krebs Units at 25° C.

While the viscosity of the original test sample maybe anywhere within the stipulated range, the viscosity of all paint purchased on the basis of these performance tests shall be within plus or minus 5 Krebs Units of the original test sample throughout the production of the entire order, providing such variation shall be entirely within the specified limits.

The paint shall have acceptable spraying characteristics within the required working temperature ranges.

### 3.3. Settling Rate

Shall provide a rating of 6 or higher (ASTM D869-78).

Section:

TRAFFIC PAINT

Subject:

CONVENTIONAL ALKYD - WHITE AND YELLOW

### 3.4. Colour

White paint shall conform to Canadian General Standards Board Specification 1-GP-12C White 513-301. The yellow paint shall conform to the Province of Saskatchewan's Yellow Traffic Paint Standard #88001-SM.

The colour shall provide a rating of 6 or higher, based on the Department's Reference Standards.

### 3.5. Drying Properties

The paint should dry in not more than 30 minutes when tested according to ASTM Method D711-75.

### 3.6. Bleeding

The bleeding characteristics shall provide a rating of 6 or higher from the Photographic Reference Standards (application - ASTM D969-54, evaluation - ASTM D868-48).

### 3.7. Flexibility

The paint should not crack or peel when subject to the bending test at  $23^{\circ} \text{C} \pm 2^{\circ} \text{C}$  using a 1.27 cm diameter mandrel (CGSB Method 119.1).

### 3.8. Solids by Volume

The Solids by Volume must be greater or equal to 50%, by comparing wet to dry film measurements.

### 3.9. Pigment Content By Mass

The total pigment content shall greater than or equal to 50% by mass, when tested in accordance with CGSB specification 1-GP-71, Method 21.1.

## 4. DURABILITY

The paint will be subjected to a six month road service test. One or more transverse lines of dimensions specified by the Department of each sample submitted, will be applied on bituminous surfaced highways selected for the test. This Test Section shall be on a 4-lane highway with a minimum 15,000 ADT. The lines will be rated for failure after the 6 month service period by a panel of department officials.

Section:

TRAFFIC PAINT

Subject:

CONVENTIONAL ALKYD - WHITE AND YELLOW

The rating will be based on an estimate of the remaining intact film by each panel member on a scale of 1 to 10. Only those samples with average ratings of 5.0 or higher be considered as having passed this test. The rating panel will consist of a minimum of 5 of the following; District Engineer, Senior Materials Engineer, Materials Engineer, Pavement Marking Supervisor, Regional Marking Supervisor, Pavement Marking Foreman and Paint Testing Specialist.

#### **4.1. Retro-reflectivity**

Suppliers must indicate the volume solids for each sample. The department will ensure a dry film thickness of 180 mm - 200 mm on the test stripe and an initial minimum retro-reflectivity of; white - 200 mcd/m<sup>2</sup>/lux, yellow - 175 mcd/m<sup>2</sup>/lux. After the 6 month road service test, the final minimum reflectivity shall be; white - 115 mcd/m<sup>2</sup>/lux, yellow - 100 mcd/m<sup>2</sup>/lux.

# Specifications For Manufactured Materials

SMM 1301-3

Section:  
TRAFFIC PAINT

Subject:  
CONVENTIONAL ALKYD - WHITE AND YELLOW

## APPROVAL SHEET

New  Revision  Date of Previous Document 93-04-27

Effective Date: 99-08-18

Description of Revision (Reason for Revision):

Updating the name of Testing Services

Review/Implementation Process:

Other Manuals/Policies Affected:

Follow Up/Training Required:

Nil

Comments/Concerns/Implications (Budget/Environment/Stakeholders):

Nil

Prepared and Recommended by: Abdul Qayyum 99-08-18  
Testing Standards Engineer Date

Recommended by: \_\_\_\_\_  
Director, Testing Services Date

Approved by: \_\_\_\_\_  
Executive Director, Eng. Services Date

Electronic File Updated \_\_\_\_\_  
Update Mailed \_\_\_\_\_