# CALIFORNIA DEPARTMENT OF TRANSPORTATION

## AUTHORIZATION REQUIREMENTS AND ACCEPTANCE CRITERIA FOR METHYL METHACRYLATE TRAFFIC STRIPING PAINT

The following procedures are required to authorize Methyl Methacrylate traffic paint suppliers for inclusion on the Authorized Material List (AML). This program is administered by the Office of Roadway Materials Testing, Chemical Testing Branch. Methyl Methacrylate traffic paint specification requirements will be incorporated into Section 84-2 of the 2022 Standard Specifications. At this time, it is a Revised Standard Specification.

Use Methyl Methacrylate painted traffic stripes and pavement markings on roadways where (1) light-to-moderate snow plowing is required and (2) abrasion-resistant striping is required.

Use recessed Methyl Methacrylate (RMMA) for elevations above 3000 ft. Category 2 material (4:1 mix ratio) is used in recesses in regularly snow plowed highways and will be the most durable in all other applications.

Methyl Methacrylate (MMA) traffic paints are two-component liquid pavement marking/traffic striping materials that consist of a MMA resin (pigmented) and a catalyst. The two components are mixed as they are applied and generally cure in less than 15 minutes (at 77°F)

MMA paint manufacturer recommends post applied beads so that traffic stripes and pavement markings will have a minimum initial retroreflectivity of 500 mcd·m-2·lx-1 for white and 300 mcd·m-2·lx-1 for yellow when measured under ASTM E1710. Post applied glass beads shall have a coating recommended by the MMA paint manufacturer to improve bead retention in the stripe.

**1. For new materials the manufacturer will provide:**

A. Authorized Material List Submittal Form TL-9502, <http://cefs.dot.ca.gov/jsp/forms.jsp>
B. Material/system data sheet with detailed performance information, properties and installation instructions. Data in this document will indicate that the system will meet the performance acceptance criteria.
C. Safety Data Sheet.
D. Send in a quart sample of methyl methacrylate traffic paint, both white and yellow to the Chemical Testing Branch.
E. Manufacturer and product name of post applied glass beads.

**2. Performance acceptance criteria:**

The manufacturer shall provide the following information:

- Mix ratio, by volume or weight
- Potlife/ working time
- Lead or chromium content, must be less than 20 mg/kg lead and 5 mg/kg chromium
- No track time, with post applied beads
- Initial expected retroreflectivity with the post applied beads.

| Quality Characteristic | Test Method | Requirement |
|---|---|---|
| Daytime and Nighttime Color, white and yellow | ASTM D 6628 | within color box |
| Luminance Factor, white, min | ASTM D 6628 | 80 |
| Luminance Factor, yellow | ASTM D 6628 | 42-60 |
| Yellowness index, Illuminant C, 2° Std Observer, max, white only | ASTM E 313 | 10 |
| Yellowness index, after 300 hrs QUV-A exposure [a], max | ASTM E 313 | 15 |
| Color match, yellow, after 300 hrs QUV-A exposure [a] | ASTM D6628 | Within yellow color box |
| Adhesion to concrete, 30 mils on a concrete brick, psi, min | ASTM D 4796 | 300 |
| Hardness, Shore D, min | ASTM | 50 |
| [a] QUV ASTM D 4587, Cycle 2 | - | - |

**3. Send the submittal and sample to the Chemical Testing Branch.**

Caltrans Transportation Laboratory
Attention: Rachael Chavez, Two Component MMA Traffic Paint
5900 Folsom Boulevard
Sacramento, CA 95819

When the submittal package has been evaluated and reviewed, the Department will notify the manufacturer of the findings. When any discrepancies are resolved to the satisfaction of the Department the material will be placed on the AML. Please allow up to 90 days for evaluation of samples once received.

The authorization of methyl methacrylate traffic paint will expire in 5 years.

The Department reserves the right to sample, test and to remove the product from the AML at any time.

**4. Reauthorization:**

Manufacturer should submit its package with current information to the Chemical Testing Branch at least three (3) months prior to the listed expiration date.

Contact the Chemical Testing Branch with any questions about this program. Rachael Chavez at (916) 227-0388 or <rachael.chavez@dot.ca.gov>.