

Road Marking Construction Technical Specifications



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This standard specifies the general requirements of road traffic marking project, construction preparation, construction technology, construction points, quality inspection and other basic technical standards, is the technical basis for road traffic marking construction and acceptance.

This standard applies to all levels of highway and municipal road traffic marking project operation guidance and quality control.



1.General provisions

1-1 Basic requirements

a. Cement concrete pavement should be marked after the removal of concrete curing film, and no obvious cracking phenomenon.

- b. Marking line should be smooth and correct in size.
- c. The road surface should be carefully cleaned before marking spraying to ensure dryness and no dusting.
- d. The color, shape and setting position of the road marking should be in accordance with the regulations and design requirements.

1-2 Quality requirements of finished coating

a. Normal temperature solvent type pavement marking paint

Paint condition: no skinning, lumping and easy to stir up by jumping knife.

Main test items: density, viscosity, construction performance and color performance, abrasion resistance, water resistance, alkali resistance, adhesion, flexibility, solid content, glass bead spreading test and thermal stability.

b. Hot melt road marking coating

Finished state: dry powder.

Hot melt state: put a certain amount of specimen in a metal container and heat it, melt it under stirring, uniformly up and down, and without bubbles.

Main test items: density, softening point, appearance, color properties, compressive strength, abrasion resistance, water

resistance, alkali resistance, drying time, glass bead content, fluidity, low-temperature crack resistance of the coating, heating stability.

c. Two-component coating

Condition of the coating in the container: no skinning, lumping, easy to stir with a jumping knife.

Main test items: density, construction performance, film appearance, non-stick tire drying time, chromaticity performance, abrasion resistance, water resistance, alkali resistance, adhesion, flexibility, glass bead content.

d. Glass beads

Main test items: particle size distribution, rounding rate, density, refractive index, water resistance, magnetic particle content.

2.Preparation

2-1 Technical preparation

Verify the conformity between the design documents and the actual topography and transportation environment on site.

Prepare implementation construction organization design, and conduct quality and safety technical briefing for construction personnel.

2-2 Machinery and equipment preparation

Before spraying construction, check the road marking machine nozzle with or without plugging, leakage, width whether to meet the construction requirements, whether the rotation wheel is running normally. Before heating the hot melt kettle, must check the parts without obstacles and loose phenomenon, and the oil supply, water supply system carefully check. In order to ensure the smooth progress of construction operations, to prevent fire and mechanical safety accidents!

2-3 Safety preparations

Marking construction should be closed before the construction site, and set up safety facilities according to regulations. All construction personnel must wear reflective construction clothing and helmets to ensure personal safety. In the opening of the road construction, must be equipped with full-time safety personnel engaged in safety management, and according to “Highway Maintenance Safety Regulations” set up construction cones, safety barriers, and warning, reminder signs and other safety facilities, used to divert vehicles, directing traffic, to ensure construction safety.

3. Construction process

3-1 Process requirement

- 1) in the process of demarcation, to observe the spreading of glass beads at any time, to avoid uneven spreading of glass beads. Timely check the glass bead hopper inventory, to avoid interruption of glass bead spreading in the construction process.
- 2) Pay attention to the mechanical operation when operating the road marking machine, find abnormalities in time to stop and check to reduce mechanical wear and other failure rates.
- 3) marking line completely dry before opening to traffic.

3-2 Hot melt marking construction process

Closed to traffic → clean the road surface → measurement and sampling → primer marking → hot melt marking material → correction → clean up the scene → open to traffic

3-3 Hot melt marking construction process

a. Paint melting:

- (1) The temperature should be controlled within the range of (180°C~220°C). Avoid heating at high temperature for a long time to prevent the paint from discoloration and aging. Adjust the

fire and mixer speed according to the amount of paint and viscosity requirements to avoid local overheating.

2) It should be fully stirred and mixed to make the paint uniform.

3) Pay attention to the number of heating, each kettle of paint as far as possible only once, the kettle should be exhausted every day.

b. Road surface cleaning

Keep the road surface clean at the application site. Dust, mud and water on the road surface is the main factor hindering the adhesion of paint, according to different situations using brooms, road sweepers to remove thoroughly. Rinse with water if necessary, and wait until the road surface is dry before construction.

c. Sampling

Carefully verify the road surface condition, the lane edge line, lane demarcation line, interchanges, level crossings, entrance and exit markings, guide arrow lines, etc. according to the drawings and design requirements for step-by-step inspection.

Lane demarcation line and edge line, should be based on the highway center line to find out the sampling datum, marking the width of the line. According to the datum point according to

10-20m interval, with the measuring rope put out the datum line. Use the water line sampling car along the datum line for marking line sampling, and check, adjust, make the line straight and smooth. In the curve section, set the reference point every 5-15m. The sample line is corrected every 50m. Mark the half-width point of the marking line according to the datum line. Finally check to confirm that the demarcation line is consistent with the road design line.



[Thermoplastic Road Marking Machine](#)

d. Hot melt coating line drawing preparation

Add the hot melt paint into the hot melt kettle and heat it evenly to

180~220°C, and at the same time, heat the [road marking machine](#). Add the melted paint into the marking machine. Make initial adjustments to the road marking machine, so that the width and thickness of the marking line and the amount of glass beads spread to meet the design requirements. Then draw a test section of not less than 150m, check the color, thickness, width, glass bead dispersal amount and other indicators, if necessary, but also for parameter adjustment. After passing the inspection by the supervising engineer, the marking will be carried out on the fully dry road surface.

e. Delineation

(1) marking should be carried out before the inspection of construction machinery to ensure that the equipment is in good condition.

(2) marking machine down the hopper should be installed windshield, to avoid marking the bottom of the hopper fire is blown out, interrupting the construction.

(3) marking line delineation, should be carried out after the undercoating agent is dry, so as to avoid the formation of bubbles on the surface of the marking line.

(4) construction road temperature should not be less than 5°C.

(5) Road marking machine in the paint to keep melting evenly.

(6) marking the surface of the glass beads should be spread evenly, set in the right amount, the amount of spreading is appropriate for each square meter 300 ~ 400g

(7) marking line cooling curing film should be naturally cooled 3-5 minutes to ensure adhesion.

f. With the following conditions, it is appropriate to extend the construction:

(1) just paved asphalt pavement, easy to cause pollution of the marking.

(2) newly poured concrete pavement, the road surface slurry treatment, and then marking.

4. Quality inspection

1, The width of the marking line should meet the requirements of design documents and construction specifications, and be completed in one coating.

2, the thickness of hot melt marking line is 1.0-4.5mm.

3, when marking the guide arrow, must use the mold or cover the edge with the baffle plate for marking.

4, Glass beads should be evenly embedded in the reflective coating surface.