Water-Based Acrylic Road Marking Paint

Draft technical specification for procurement in 20 .....

About this document

This text is a model draft technical specification that contracting authorities may use in tenders for the procurement of goods. The dotted fields are to be filled in by the Contracting Authority. The text does not describe any brand or manufacturer; the Contracting Authority may amend the clauses according to its needs and the legislation in force. This is an English translation for information; the referenced standards and regulations are those in force in Türkiye.

1. GENERAL PROVISIONS AND SCOPE

1.1 For use in horizontal marking works to be carried out to ensure traffic order and safety on the roads of our city: ..... kg of water-based acrylic road marking paint

1.2 A TS EN 1871 certificate of conformity is mandatory for the paint. The bidder shall submit this certificate to the Contracting Authority in full at the bidding stage.

1.3 The paint manufacturing company shall hold ISO 9001:2015 (Quality Management System) and ISO 14001:2015 (Environmental Management System) certificates. The bidder is obliged to submit these certificates to the Contracting Authority at the bidding stage.

2. TECHNICAL SPECIFICATIONS OF THE MATERIAL

Water-based acrylic paint standards

2.1 **Chemical structure:** The paint shall be manufactured as a water-based, matt product based on pure acrylic emulsion or acrylic copolymer. It shall feature quick-drying (quick-set) technology.

2.2 **Application conditions:** The product shall be applied to a clean and dry surface under environmental conditions free of wind and precipitation, provided that the ambient and asphalt temperature is at least 10 °C and at most 40 °C and the relative humidity is at most 80%.

2.3 **Drying times:** At a temperature of 23 °C and a relative humidity of 50%, the surface drying time of the paint shall be at most 15 minutes, and the hard/through-drying time, such that it does not obstruct vehicle traffic, shall be at most 40–45 minutes.

2.4 **Equipment compatibility:** So that the paint does not cause corrosion, the road marking machines and spray guns to be used for application must be made of stainless steel.

Table 1: Luminance factor values (β)

Colour	Class	Luminance factor (β)
White	LF 7	≥ 0.85
Yellow	LF 2	≥ 0.50

Table 2: UV ageing values

Colour	Class	Luminance difference (Δβ)
White, yellow	UV-1	≤ 0.05

2.5 **Chromaticity:** The colour of the product shall fully comply with the official chromaticity coordinates specified in the TS EN 1871 standard.

2.6 **Hiding power:** When tested in accordance with ISO 2814, the contrast ratio shall be at least 95% for white and at least 90% for yellow.

2.7 **Storage stability:** When tested in accordance with TS EN 1871, the paint shall have a storage stability rating of 6 or higher. (The decision whether or not to have this test performed lies entirely within the authority of the Contracting Authority.)

Laboratory and chemical analysis parameters

2.8 **Solids content:** Shall be 75 ± 2% (in accordance with TS EN 12802 Annex A).

2.9 **Binder content:** Shall be at least 18% (in accordance with TS EN 12802 Annex B).

2.10 **Product density:** The density shall be in the range of 1.50 ± 0.2 kg/lt (in accordance with TS EN ISO 2811).

2.11 **Rutile TiO_2 content:** The residue of the white paint shall contain at least 15% rutile titanium dioxide (in accordance with ASTM D 1394).

2.12 **Environment and human health criterion:** The water-based paint shall be environmentally friendly and shall under no circumstances contain any thinner or solvent-based diluent. It shall not contain lead compounds, heavy metals or aromatic hydrocarbons that are harmful to the environment and human health.

Mechanical strength and surface adhesion

2.13 **Specification compliance:** The flexibility, resistance to seepage and resistance to salt water of the paint shall fully comply with the provisions of the current Highway Technical Specification (Karayolu Teknik Şartnamesi).

2.14 **Abrasion resistance:** The abrasion resistance shall be at least 100 Lt.

2.15 **Glass bead retention:** When tested in accordance with the TCK (General Directorate of Highways) technical specification, the percentage of glass beads shed from the surface shall be at most 10%.

2.16 **Ease of application:** The paint shall be applicable directly by spraying at its original consistency, without being thinned with water on site. After application, the equipment shall be easy to clean with clean water.

3. PACKAGING AND DELIVERY PRINCIPLES

3.1 All markings, warning symbols, labels and dimensions on the packaging shall fully comply with the SEA Regulation (Turkish CLP: classification, labelling and packaging of substances and mixtures) in force.

3.2 The product label shall clearly state the product name, batch (lot) number, production date, expiry date and net quantity.

3.3 The containers shall be stacked on sturdy pallets measuring 100 cm × 120 cm, with no more than 3 containers on top of each other. The drums on the pallet shall be tightly wrapped with at least 3 layers of stretch film.

3.4 The paint type of the materials on the pallet shall be clearly indicated on a durable label affixed to the outer surface of the pallet so as to be easily visible from a distance of 2 metres.

3.5 The wooden pallets shall be manufactured with a structure allowing them to be moved by forklifts and pallet trucks. The pallets shall be dimensioned so that two fit side by side across the inner width of the transport truck bed, leaving a gap of no more than 5 cm between each side and the truck bed. The contractor may start production only after obtaining the written approval of the Contracting Authority regarding alternative pallet dimensions and packaging method.

3.6 The materials covered by the specification shall be delivered by the contractor, in the specified quantities, to the Contracting Authority's ..... Warehouse.

4. INSPECTION AND ACCEPTANCE PROCEDURES

4.1 Inspection and acceptance procedures shall be carried out in accordance with the provisions of the Regulation on Inspection, Examination and Acceptance Procedures for Goods Procurement (Mal Alımları Denetim, Muayene ve Kabul İşlemlerine Dair Yönetmelik) in force.

4.2 Inspection and Acceptance Committees shall be established by the Contracting Authority to carry out the inspection of the materials delivered to the ..... Warehouse. The delivered materials shall first be subjected to a visual (physical) inspection at the place of delivery. If they are found satisfactory in the physical inspection, the Contracting Authority is authorised to take samples from the manufactured materials and send them to ..... , with transport and all laboratory analysis costs borne by the contractor.

4.3 The contractor shall deliver to the Contracting Authority, in full, the technical documents and product data sheets on the correct use and technical properties of the delivered materials.

4.4 Materials rejected for non-compliance with the specification according to the laboratory inspection results shall be promptly taken back by the contractor from the warehouse to which they were delivered, upon official notification to the contractor. The contractor is obliged to redeliver new material in the same quantities and with the required technical properties to the place from which it was taken back. Material not complying with the provisions of the specification may be brought again, provided that this is within the legal delivery period.

4.5 Where the laboratory analysis results become known after the official delivery period of the work and the product is rejected, the contractor shall be permitted, once more, to bring new material in place of the rejected batch, subject to a daily penalty of 0.5% (five per thousand) and provided that this does not exceed 20 days. These newly delivered batches shall also be accepted if they are found to be compliant after laboratory inspection.

4.6 Final acceptance of the materials found to comply with the principles of the Technical Specification as a result of the laboratory inspection shall be carried out by the Inspection and Acceptance Committee, and their entry into the warehouse shall be formally completed.

4.7 Should the contractor formally object to paint and glass bead material found non-compliant according to the laboratory inspection results, the examination for the objection inspection shall be carried out on the reference (witness) samples previously taken from that material and securely kept by the Contracting Authority. An independent Referee Laboratory shall be designated by the Contracting Authority to perform the tests. The analysis report issued by the referee laboratory on the matters subject to objection shall be final and binding.