Acrylic-Based Cold 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 acrylic-based cold road marking paint

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

1.3 The paint manufacturer 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

Acrylic-based cold road marking paint standards

2.1 The paint shall be manufactured as a single-component product based on 100% pure acrylic resin or acrylic copolymer binder, solvent-based or water-based (as requested by the Contracting Authority).

2.2 The product shall be applicable without problems at ambient and surface temperatures between 5 °C and 40 °C, under conditions where the relative humidity does not exceed 85%.

2.3 The surface drying time of the paint shall be at most 15 minutes, and the through-drying time shall be between 30 and 45 minutes (under standard conditions of 23 °C ambient temperature and 50% relative humidity).

2.4 After application, depending on weather conditions, the road shall be safely opened to vehicle traffic within 30 to 45 minutes.

Table 1: Luminance factor values (β)

The luminance factor classes of the paint shall fully meet the limits in the table below.

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

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

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

2.8 When the paint container is opened for the first time, no skinning or coagulation whatsoever shall be observed on the surface.

Table 2: UV ageing values

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

Table 3: Bleeding resistance values

Colour	Class	Luminance factor difference (Δβ)
White – yellow	BR-1	≤ 0.03

Laboratory and chemical analysis parameters

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

2.10 **Binder content:** Shall be at least 18% (expressed as pure acrylic copolymer solids) (in accordance with TS EN 12802 Annex B).

2.11 **Viscosity:** Shall be in the range of 80–95 KU (in accordance with TS EN 12802; at a temperature of 23 °C ± 0.02 °C and a relative humidity of 50 ± 5%).

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

Durability and physical properties

2.13 **Specification compliance:** The high UV resistance, resistance to yellowing, flexibility, resistance to seepage, resistance to diesel fuel and resistance to salt water of the paint shall fully comply with the most recent Highway Technical Specification (Karayolu Teknik Şartnamesi) and with the requirements for acrylic-based systems.

2.14 **Abrasion resistance:** Owing to the high strength provided by the acrylic resin, the abrasion resistance shall be at least 120 Lt (or an equivalent high class in the relevant abrasion disc test).

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

2.16 **Ease of application:** The paint shall be suitable for application directly by spraying or spreading with road marking machines, without being thinned with any thinner or solvent on site.

3. PACKAGING AND DELIVERY PRINCIPLES

3.1 The paint shall be delivered filled in 25 kg corrosion-resistant, internally lacquered tin containers with handles.

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

3.3 The product label shall clearly state the product name (Acrylic-Based Cold Road Marking Paint), colour, batch (lot) number, production date, expiry date and net quantity.

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

3.5 The paint type and colour 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.

3.6 The wooden pallets shall be manufactured with a leg 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 the pallet dimensions and packaging method specified in the technical specification, or any different ones it may propose.

3.7 The materials covered by the specification shall be delivered by the contractor, in the specified quantities and without any problems, 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 published in Official Gazette No. 24968 of 19 December 2002.

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 shall, where it deems necessary, take samples from the manufactured materials. The samples shall be sent to the ..... laboratories, 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 (TDS) and Safety Data Sheets (MSDS/GBF) on the correct use, technical properties and occupational health and safety requirements 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. Where the 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.

4.5 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.

4.6 Should the contractor formally object to acrylic-based paint 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.