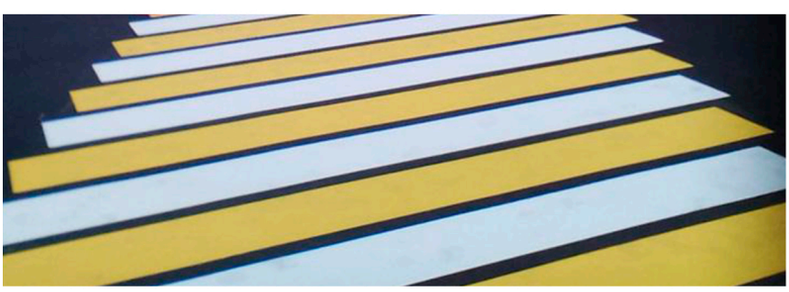
RIMINVEST | innovative road materials

3 Okskaya gavan str., Nizhny Novgorod, Russia, 603016
+ 7 (831) 219-96-37 zakaz@riminvest.ru

# ROAD PAINTS

## ACRYLIC ENAMEL



### Efficiency

- Fast drying.
- High brightness coefficient.
- Resistant to water, gasoline, and many chemicals.

## COLD PLASTIC

**Description:** White liquid mixture. Polymerizes through interaction with hardener. Does not require a warmup before application, which gives the possibility to paint quality road marking lines avoiding deformation.

### Efficiency

- Resistant to sunlight and precipitation.
- Wear-resistant, retains color, resistant to reagents.
- Has a long service life.

## THERMOPLASTIC

**Description:** White loose mixture. Consists of polymers, pigments, and fillers.

### Efficiency

- Weatherproof.
- Resistant to chemical action.
- Provides grip of vehicle wheels.

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# PAINTS FOR ROAD MARKING

production capacity
**65,000 TONS**

**15 YEARS**
in the market

The company is in **TOP 3** Russian road paints producers

## "KOLOMNA TERM" THERMOPLASTIC (TECHNICAL REGULATION TU 2329-001-99200738-2010)

### INTENDED USE

**"Kolomna Therm" Thermoplastic** is intended for horizontal marking of public motor-road carriageways with asphalt-concrete and cement-concrete covering.

**"Kolomna Therm" Thermoplastic** is a material intended for the use on the roads in the low temperature and high operational load conditions.

It is a mixture of hydrocarbon resins, fillers, glass microspheres, plasticizer, and special additives that enable production of a material that is resistant to cold cracking and, at the same time, retains strength at high temperatures.

### PROPERTIES

Weatherproof, wear-resistant, flexible material characterized by high adhesion to the base, as well as resistance to sudden temperature fluctuations of the road and the environment.

**"Kolomna Therm" Thermoplastic** was specially designed for the use in areas with the climate changing within the service life where frequent transitions of ambient temperature across the thaw point and below-freezing temperatures result in the destruction of thermoplastics produced according to common formulations.

### TECHNICAL SPECIFICATIONS

- density: (0.2+2.0) g/cm$^3$.
- softening point by ring-and-ball procedure: (95-105) °C.
- brittle point: +2 °C.
- operation temperature: (185+5) °C.
- adhesion strength: at least 40 kgf/cm$^2$.
- brightness coefficient: 70%.
- curing time: max 15 minutes.
- water absorption: max 0.05.

## APPLICATION

Thermoplastic is applied in dry weather on dry smooth road surface at a settled temperature of at least +10°C and relative air humidity not exceeding 80%.

**! It is not recommended to apply thermoplastic marking on the newly laid asphalt-concrete pavement or treated surface within two weeks after their construction.**

The work scope for the thermoplastic application includes:

- fencing;
- cleaning the road surface;
- preliminary marking;
- thermoplastic heating;
- thermoplastic laying;
- work quality control and fencing removal;

Temperature of thermoplastic application is (180-190) °C.

**! It is not recommended to mix this thermoplastic with other types of thermoplastic.**

## THERMOPLASTIC HOTMELT PREPARATION

**1.** The amount of thermoplastic is determined by the output of the marking machine.

**2.** In the beginning, set the heating up temperature of +150 °C to avoid sticking of thermoplastic to the bottom of the boiler.

**3.** Load thermoplastic into the boiler together with polyethylene package gradually.

**4.** Set the working temperature of thermoplastic preparation.

**5.** During preparation, perform forced mixing of the thermoplastic mass.

**6.** Monitor the hotmelt temperature.

**7.** Check the homogeneity of the hotmelt before application.

**8.** Avoid overheating of the thermoplastic hotmelt and excessively long preparation to prevent deterioration of physical and mechanical properties.

## THERMOPLASTIC APPLICATION

Perform marking with thermoplastic; monitor consumption rate of the material and conformity of geometrical parameters

To prevent vehicles driving on the non-cured marking lines, the thermoplastic should be fenced with the bollards or road service vehicles equipped with special signs for 10 minutes.

## CONSUMPTION RATE

6-8 kg/m$^2$ depending on the method, type and thickness of thermoplastic application.

## STORAGE

“**Kolomna Therm” Thermoplastic** must be stored in package in covered warehouses at the ambient temperature of 40 °C max in accordance with the existing fire safety rules and regulations.

Guaranteed storage life of thermoplastic is 12 months from the date of manufacture. After expiration of this period, the thermoplastic must be inspected for compliance with the requirements of GOST R 51256 and TU 2329-001-992-00738-2010.

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# PAINTS FOR ROAD MARKING

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## Two-component cold forming plastic for road marking (Technical Regulation TU 2329-003-99200738-2010)

Two-component cold plastics for road marking are two-component cold forming paintwork materials free of organic solvents designed for horizontal marking of public motor-road carriageways with asphalt-concrete and cement-concrete covering according to GOST 51256-99 and GOST 23457.

**Scope of supply.** The plastics are completed with the second component, the curing initiator. Upon agreement with the consumer, the plastics may be completed with 450 to 850 μm glass microspheres in the amount of up to 25% of the plastic weight.

## TECHNICAL SPECIFICATIONS

| | PARAMETER | RATE FOR PLASTIC |
|---|---|---|
| 1. | **Density, g/cm³:** at least | 1.85 |
| 2. | **Spread rate at (20.0-0.5) °C,** mm | 5-15 |
| 3. | **Fraction of non-volatile substances by weight,** % at least | 95 |
| 4. | **Curing time to degree 3** at (18-22) °C max | 25 |
| 5. | **Brightness coefficient,** % at least | 70 |
| 6. | **Stability of formed plastic film to static impact of 3% aqueous solution of sodium chloride,** days at least | 3 |

## APPLICATION

**1.** Marking with plastics should be applied in dry weather on dry road surface cleaned from dust and dirt at a settled ambient and surface temperature of 5 to 30 °C and relative air humidity not exceeding 90%.

**! Application of spray plastics on unprepared coating is prohibited.**

**! It is not recommended to apply plastic marking on the newly laid road coatings or on treated surfaces within one-two months after their construction, as well as on the road coating with bitumen bleeding and remainders of lubricants.**

**2.** Before use, the plastics must be thoroughly mixed in the packaging containers for 3 min. Two-component plastic marking is applied using special marking equipment, hand plastic applying devices, or manually using templates.

**Consumption rate** of the material at layer thickness of 2-2.5 mm is 3.5-4 kg/m$^2$. Curing initiator is introduced into plastic in the amount of 2% while mixing immediately before applying.

**Time** before beginning of operation is about 30 min. Distribution of glass microspheres is performed on top of the freshly laid plastic layer no later than 10 seconds after its application in the amount about 200 g/m$^2$.

**Transport** passage over the marked lines is permitted not earlier than 30 min after their application.

**The marking shall conform to the requirements of GOST 13508.**

Marking **service life** is 2 years. Plastic marking shall be subject to renewing upon 50% wear by area.

## PRECAUTIONS

- **Diluting of plastic by organic solvents is not allowed.**
- **It is not allowed to mix different brands of plastics.**
- **Store in well ventilated premises.**
- **Keep away from direct sunlight.**
- **INFLAMMABLE.**
- **No smoking!**
- **Do not pour down the drain.**
- **Observe precautionary measures against static electricity.**

## PACKING

Plastics are packed in sealed plastic buckets, 15 kg per bucket; the hardener is provided in packages at the rate of one 300 g (2%) package of hardener per plastic bucket.

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# PAINTS FOR ROAD MARKING

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## Two-component cold forming A+B resin-based spray plastics for road marking (50:50/1:1)

Resin-based spray-plastics are three-component systems (main material consisting of components A and B and hardener).

Cold spray plastics are cold forming paintwork materials free of organic solvents designed for horizontal marking of public motor-road carriageways with asphalt-concrete and cement-concrete covering according to GOST 51256-2011.

**Scope of supply.** The finished product of component A and B is released by the enterprise in metal buckets weighing 28 kg. The basic component for hardeners is dibenzoyl peroxide. Its content is over 50% in BPO hardening powder and 40-50% in BPO hardening mix that are used as curing agents for cold plastics and cold spray-plastics. It is usually used in the amount of 2%.

## TECHNICAL SPECIFICATIONS

| | PARAMETER | RATE FOR PLASTIC |
|---|---|---|
| 1. | **Density,** kg/l at least | 1.7 |
| 2. | **Viscosity according to B3 246 viscometer with 4 mm nozzle (at 1-20 °C),** sec. | 165-180 |
| 3. | **Fraction of non-volatile substances by weight,** % at least | 95 |
| 4. | **Curing time to degree 3** at (18-22) °C max | 10 |
| 5. | **Brightness coefficient,** % at least | 80 |
| 6. | **Stability of formed plastic film to static impact of 3% aqueous solution of sodium chloride,** days at least | 3 |

## APPLICATION

**1.** Marking with plastics should be applied in dry weather on dry road surface cleaned from dust and dirt at a settled ambient and surface temperature of 5 to 30 °C and relative air humidity not exceeding 90%.

**! Application of spray plastics on unprepared coating is prohibited.**

**! It is not recommended to apply plastic marking on the newly laid road coatings or on treated surfaces within one-two months after their construction, as well as on the road coating with bitumen bleeding and remainders of lubricants.**

**2.** Before application of spray plastics, component A and component B are poured into 300-500 l receivers of the marking machine. Preliminarily (no later than 6 hours) before the mixture application on the road surface, curing initiator is thoroughly mixed in its package for 5 minutes and then added in the component B in the amount of 2% by weight. Each of the receivers should be filled with one type of component only. For each of materials of groups A and B, separate standard kits of accessory equipment (mixers, applicators, etc.) should be used. Contact or mixing of the components to be applied even in small quantities before actual application is prohibited. To prepare the finished material, a method of closed systems is used, where spray plastic is introduced through a static mixer or mixing chamber immediately on the road surface. Closed systems allow for the use of liquid and powder hardener. Materials of components A and B are dosed in the mixer or mixing chamber in equal weight parts.

**Mixture pot life** varies from five to seven minutes at the time of its application on the road surface.

**Time to full hardening** of the mixture does not exceed 20 minutes and depends primarily on the ambient temperature. Operating viscosity of the finished spray is determined after flowing of 40 g of the mixture from the height of 10 cm in the center of a cardboard sheet. After curing, the resulting stain diameter must be equal to approximately 8-9 cm. Marking with the three-component spray plastic is applied using a special Hofman laying technology.

**Consumption rate** of the material at layer thickness of 0.7 mm is 1.2 kg/m$^2$.

**Time before beginning of operation** at higher temperatures of finished component B storage within the system with hardener, is reduced to 3-4 hours. Distribution of glass microspheres is performed on top of the freshly laid under pressure spray plastic layer simultaneously with its application in the amount about 200 g/m$^2$.

**Transport passage** over the marked lines is permitted not earlier than 20 min after their application.

**The marking shall conform to the requirements of GOST 51256-2011.**

Marking **service life** is 6 months.

## PRECAUTIONS

- **Diluting of plastic by organic solvents is not allowed.**
- **It is not allowed to mix different brands of plastics.**
- **Store in well ventilated premises.**
- **Keep away from direct sunlight.**
- **INFLAMMABLE.**
- **No smoking!**
- **Do not pour down the drain.**

## PACKING

Spray-plastics are packed in sealed metal buckets weighing 28 kg each. Component A, Component B and hardener are sold in containers at the rate of two bottles of hardener, 600 g in total, per 1 bucket of spray only for Component B.

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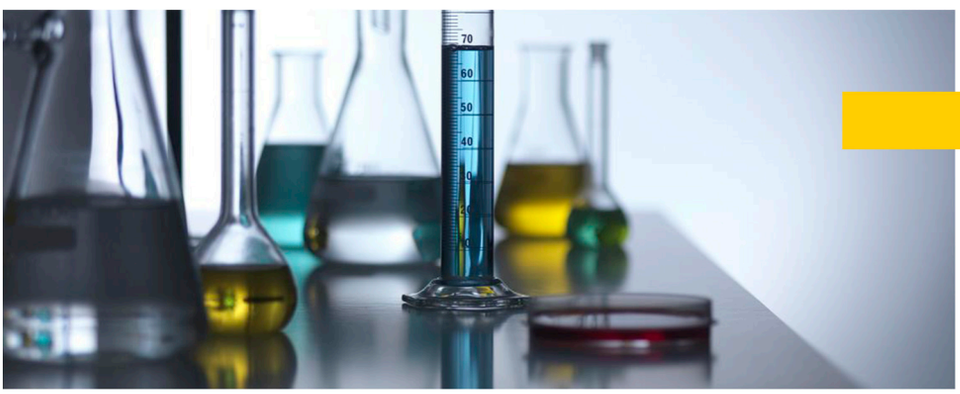

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