

**IMPROVING THE DRAINAGE SYSTEM OF HIGHWAYS USING  
PLASTIC MATERIALS IN RESPONSE TO TODAY'S DEMAND.**

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***Annotation:** The article describes the plastic materials entering the world market today and their advantages in use today, the areas of application and convenience today. The planning processes for improving the drainage system using raw materials that are economically cheaper and of better quality than the concrete drainage system are explained and calculated.*

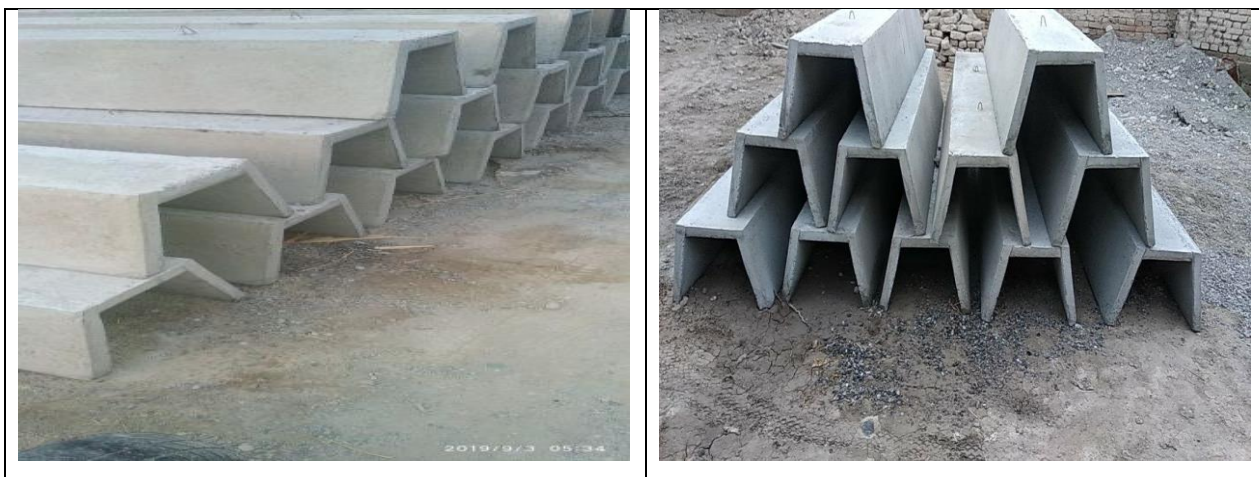
***Keywords:** Plastic, low weight, installation, smooth inner surface, Corrosion, chemical resistance, convenience, advantages, Water supply, polyethylene, metal-plastic, special grades, engineering.*

***Introduction:** Cast iron, steel, concrete: these building materials are slowly and almost irreversibly becoming a thing of the past. Instead, new favorites are plastic pipes. The triumph of plastics began in the first half of the twentieth century with the invention of the method of industrial polymerization of ethylene. The first polyethylene pipes were the result of this process. In addition, this product turned out to be so good that the rolling pipe market shook and fell under plastic pipes for water supply, heating and sewage. Over time, interest in plastic only increased. And new players have emerged around the world: polyvinyl chloride and then polypropylene pipes. Closer to our time, metallic polymers have also emerged - plastic pipes reinforced with aluminum foil. As a result, the modern range of rolled*

tubular products made of structural polymers is distinguished by simply extraordinary diversity.

**The main part:** Today, plastics based on natural resins (rosin, shellac, bitumen, etc.) have long been known. The first plastic celluloid was made from an artificial polymer - nitrocellulose (cellulose nitrate), which began production in 1872 in the United States. The production of materials based on In the 1930s, the production of thermoplastics, polyvinyl chloride, polymethylmethacrylate, polyamide, polystyrene was established in the former USSR, USA, Germany and other industrialized countries. However, the plastics industry only began to develop after World War II. In the 1950s, polyethylene plastics began to be produced in many countries. In addition, about 10 companies in Uzbekistan process plastic. Among them are Tashkent Plastics Plant, Ahangaran Building Materials Plant, Jizzakh Plastics Plant. It is widely used in construction for plastic flooring and other finishing works, sealing of buildings, hydro and thermal insulation, production of pipes, sanitary ware. The first plastic, parquet, was invented in 1856 by Alexander Parks, a Birmingham metallurgist.

Properties: Plastic has a low density (0.85-1.8 g / cm<sup>3</sup>), very low electrical and thermal conductivity. Melts during heating. Resistant to moisture, bases and acids. Polypropylene is a unique product whose invention has expanded the use of plastic pipes - thanks to special varieties of PP plastic, these products have stopped the fear of high temperatures and have the ability to withstand significant pressure without any reinforcement. Polyvinyl chloride is the most durable type of polymer. PVC pipes and the material made of them have a high degree of durability. In addition to the individual qualities mentioned above, water supply pipes - plastic, metal-plastic and copolymer - also have all the properties of all polymers. Shelf life Materials made from it have a service life of at least 50-60 years without repair. Many do not change their environment even under the influence of the external environment, as a result of which polymer products are finding their place not only in everyday life, but also in industry.

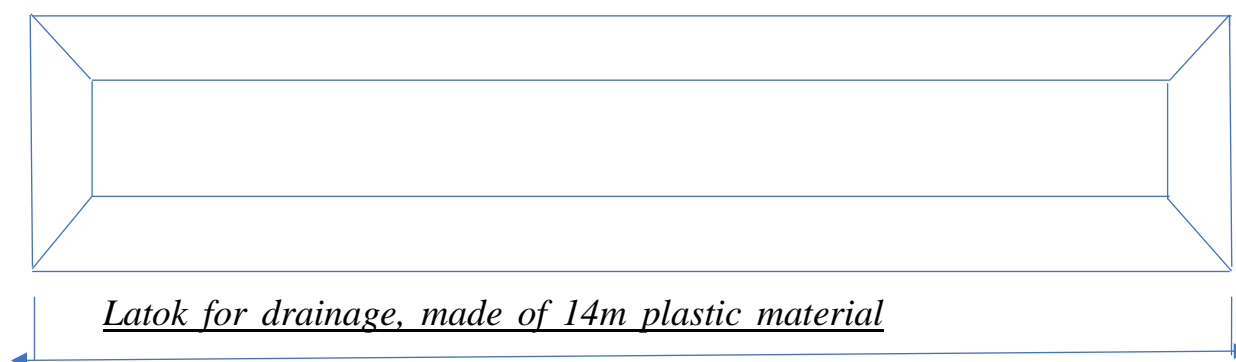


*For the preparation of 1 piece of tray for 90 thousand soums*

Types and properties of products made of plastic material. Over the past 20 years, metal pipes for laying water pipes have been significantly squeezed out by emerging competitors — plastic water pipes are confidently taking their place in this market. Represents a whole series of products in which different polymeric materials are used in the manufacture of plastic pipes, and this unites them. Their popularity is due to ease of installation, high performance and durability.

***Advantages of plastic products:*** Ease of installation and the ability to lay in different configurations and optional road conditions, and high speed. The important thing is the service life, the manufacturers declare a service life of at least 40-50 years. Resistant to corrosion, chemical resistance. We can say that the smooth inner surface of the pipe is resistant to liquid flow. Plastic pipes are characterized by good sound insulation, through which the movement of liquids is almost inaudible. The installation can be laid in a variety of conditions, including the ground. The low weight of the products makes it very easy to fasten. Plumbing plastic pipes do not require additional surface treatment. Plastic is an excellent dielectric that is not affected by stray currents, which are the main cause of damage to metal pipes. The plastic drainage system allows bonding of different polymers. During the transition to cement concrete pavements, construction began in Uzbekistan, the demand for Portland cement in the production of road construction materials, especially high-efficiency products meets modern requirements [2]. That is why we need to switch to modern and cheap plastic materials.

There are many advantages of plastic slats instead of semi-concrete slats, one of the main ones is that the weight of slats made of plastic materials is much lighter than our concrete slats. This is just an indicator of the length, which makes it much more convenient in terms of length. Concrete slabs are limited in length, ie we can make them 6-8 meters, but we can face a number of inconveniences in terms of weight and installation, including plastic. quite convenient and purposeful.



**Conclusions:** The development, design, construction and operation of the road transport sector, [1] is growing rapidly today, so I believe that the drainage system of modern highways should be modern, and therefore I think it would be expedient to use trays made of plastic materials, as in today's developed countries, instead of cement-concrete trays, which are considered obsolete. This is because, first of all, we can tell you about the low cost of economic recognition and ease of use and the convenience of the repair process. Depending on the conditions of our roads, the convenience of using a plastic trowel will increase. We can apply it in parallel with the way we are building today. It is possible to use 8 m of cement concrete slabs. Our plastic formwork can be used on a voluntary basis, depending on the condition of the road. Of course, the ability to pass water from the place where we all know, and of course, the connection is also more convenient and preferable in plastic trays. So I came up with ideas, and to see them flush it out, it's really fun.

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