

Basics of using natural basalt ore in the territory of Uzbekistan as a filler for sewage pipes

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Abstract

As the development of today's industrial development in the world increases, so does the demand for opening opportunities, and the most important demand is increasing. As the natural resources are decreasing year by year, it is an important task to find large-scale products that can replace them. The volume of production of polymer composite materials, which make up many industrial enterprises and are part of their production products, is increasing day by day. Therefore, the localization of the most basic components in the production of polymer products, i.e. fillers, thermostabilizers and plasticizers, is of great importance. Substitution of raw materials with lower prices leads to economic gains as well as significant changes in terms of quality.

Key words: basalt, filler, polyvinyl chloride, modification, gossypol resin, mixing, technological parameters.

Improving its technological parameters in the production of polymer composite materials increases economic efficiency, and the service life of products also increases. The most basic technological indicators of polymer composite materials are viscosity index, thermal stability and plasticization time. The exchange of fillers, which takes place when these indicators change for the better or remain unchanged, is considered positive. Currently, many products are produced based on polyvinyl chloride composite materials, including pipes, plastic parts, details for construction and plumbing, etc.

The year-by-year increase in the number of the population leads to an increase in the requirements for living spaces for people. This, in turn, ensures the development of social spheres within and around the building. As the demand for each necessary detail increases, so does the amount of waste that comes out of it. This increase in itself increases the demand on the sewage system. Therefore, it is necessary to carry out major reforms in the production of sewage pipes.

The annual production volume of polyvinyl chloride is 40 million tons. 70% of it is produced by suspension. Most of the produced polyvinyl chloride is used for the production of sewer pipes.

Currently, polyvinyl chloride pipes are mainly obtained on the basis of a standardized permanent composition. Below is this traditional recipe. At the same time, the main 3 technological indicators of the materials obtained on the basis of this recipe, i.e. plasticization time, viscosity-flow index (PTR), g/10min., thermal stability are also presented.

The standard recipe used for the production of polymer composite materials

№	Names of components	Traditional (standard) recipe
1	PVC	100

2	Belgorod chalk	3,86
3	Tribasic Lead Sulfate (TOSS)	1,0
4	BMR-9-1 compound	2,0
5	Stearic acid	0,15
	Technological indicators	
1	Plasticization time, min.	17
2	Viscosity index (PTR), g/10min.	0,3
3	Thermal stability at 1900C, min	45

As can be seen as a filler for composite material, added in the amount

fractions, and this should lead to the improvement of the technological parameters important for the production of the polymer, or to remain unchanged with a large extimol.

from the table above, polyvinyl chloride Belgorod chalk is of 3.86 mass

Chalk, which is included in the composition of pipes made on the basis of polyvinyl chloride in the territory of Uzbekistan, is purchased by import from the Russian Federation. Substitution of this filler with local raw materials has significant economic benefits. To replace the filler, natural basalt containing up to 21% CaO is suitable and justified itself according to laboratory results. Here is a new recipe used for the production of sewer pipes:

№	Names of components	Traditional (standard) recipe
1	PVC	100
2	Basalt	3,86
3	Tribasic Lead Sulfate (TOSS)	1,0
4	BMR-9-1 compound	2,0
5	Stearic acid	0,15
	Technological indicators	
1	Plasticization time, min.	8
2	Viscosity index (PTR), g/10min.	0,35
3	Thermal stability at 1900C, min	67

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