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ПОВЫШЕНИЕ ЭКСПЛУАТАЦИОННЫХ ПОКАЗАТЕЛЕЙ ДОРОЖНЫХ ПОКРЫТИЙ С АСФАЛЬТОВЫМ ГРАНУЛЯТОМ

Аннотация. Состояние асфальтобетона и его нормативный срок эксплуатации на дорогах общего пользования являются основными показателями дорожного покрытия. Рассмотрены факторы нарушения верхнего слоя асфальтобетона от повышенных динамических воздействий колесной нагрузки транспортных средств. Эксплуатационные показатели характеризуются прочностными и деформационными характеристиками.

Проанализированы и обоснованы факторы обеспечивающие необходимые деформационные и прочностные параметры при эксплуатации дорожного полотна. Определены показатели и условия контакта поверхности измельченного гранулята в зоне соприкосновения с вяжущими компонентами.

Предложен способ использования асфальтового гранулята трех типоразмеров при формировании верхнего слоя дорожного покрытия с нормативным, эксплуатационным сроком службы и рациональным использованием материально-технических ресурсов на всех стадиях формирования и укладки асфальтобетона. Прочность дисперсной системы достигается при формировании асфальтовой смеси за счет повышения плотности, прочности, адгезии вяжущего, водостойкости и сохранения структуры дорожного покрытия. Экспериментом установлен объемный и фракционный типоразмер асфальтового гранулята в общем объеме смеси. Объемный состав содержания гранулята в общем объеме смеси составляет от 20% до 25%.

Ключевые слова: асфальтобетон и дорожное покрытие, показатели прочности и деформации, асфальтовый гранулят, плотность, старение.

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IMPROVING THE PERFORMANCE OF ROAD SURFACES WITH ASPHALT GRANULATE

Abstract. The condition of asphalt concrete and its standard service life on public roads are the main indicators of the road surface. The factors of violation of the top layer of asphalt concrete from increased dynamic effects of the wheel load of vehicles are considered. Performance indicators are characterized by strength and deformation characteristics.

The factors providing the necessary deformation and strength parameters during the operation of the roadway are analyzed and justified. The indicators and conditions of contact of the surface of the crushed granulate in the zone of contact with the binding components are determined.

A method of using asphalt granulate of three standard sizes in the formation of the top layer of pavement with a normative, operational service life and rational use of material and technical resources at all stages of the formation and laying of asphalt concrete is proposed. The strength of the dispersed system is achieved during the formation of an asphalt mixture by increasing the density, strength, adhesion of the binder, water resistance and preservation of the structure of the pavement. The experiment established the volumetric and fractional standard size of asphalt granulate in the total volume of the mixture. The volume composition of the granulate content in the total volume of the mixture is from 20% to 25%.

Keywords: asphalt concrete and road surface, strength and deformation indicators, asphalt granulate, density, aging.

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