

FUNCTIONAL PROPERTIES OF BAGHOUSE FILLERS FROM A DUST EXTRACTOR INSTALLED IN AN ASPHALT PLANT

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ABSTRACT

The aim of the work was the assessment of five filler types used for Hot-Mix Asphalt. The materials used in the study were filler samples obtained from a dust extractor of an asphalt plant in Poland, mastics containing these fillers and a 50/70 penetration grade bitumen.

In the first part of the paper a comparative analysis of the structure of limestone, basalt, dolomite, melaphyre and grano-dioryte fillers was carried out. For this purpose the grain-size distribution, specific surface area and Rigden voids of fillers were determined. Additionally the grain morphology of fillers was evaluated (i.e. sphericity and roundness of grains). Special attention was paid to content of harmful clays in fillers determined by the Methylene Blue Value Test.

In the second part, quantitative and qualitative estimations of the functional properties of these fillers were performed, i.e. stiffening properties of fillers in mastics, bulk volume concentration and activity index of fillers.

A search for the quantitative relationship between the structure and the functional properties of fillers was conducted in order to assess the applicability of baghouse fillers for asphalt pavement courses.

KEY WORDS: Baghouse filler, mastic, structural feature, stiffening property.