PERFORMANCE OF ASPHALT DETERMINED BY THE TENSILE CREEP TEST ON BINDER AND ASPHALT MORTAR

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ABSTRACT
The performance of an asphalt surface is largely determined by the used binder. Depending on the location, the asphalt road is exposed to wide temperature ranges. Test methods that are commonly used, generally focus either on the cold end, e.g. with the resistance against low temperature cracking addressed by the thermal stress restrained specimen test or at the warm end, e.g. with the resistance against permanent deformation addressed by the cyclic compression test. Until now, no test method to address both competing ends and therefore the whole scope of the application has been established. The tensile creep test (TCT) is a test method which addresses binder or mortar at low temperatures. However, results of this test method may indicate the performance of an asphalt mixture at both high as well as low temperatures. The paper introduces the test method TCT, results of tests on binder and mortar and correlates them with the asphalt's resistance to rutting and cold-induced cracking.