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**INFLUENCE OF RHEOLOGICAL PARAMETERS OF
BITUMINOUS MIXTURES ON THEIR DEFORMATION
IN RUTTING TESTER**

A. Szydło*

Prof., PhD, DSc., Wrocław University of Technology, PL

*Institute of Civil Engineering, 50-370 Wrocław, Poland

P. Mackiewicz

PhD, Wrocław University of Technology, PL

szymon@i14odt.iil.pwr.wroc.pl , macek@i14odt.iil.pwr.wroc.pl

ABSTRACT

The influence of the rheological parameters of bituminous mixtures on the deformations of the latter when tested in the French Pavement Rutting Tester (FPRT) is examined. An FEM-based theoretical model of the FPRT test has been developed. The rheological parameters of the mixtures were determined by the creep test in NAT (Nottingham Asphalt Tester). The creep test consisted of three loading-unloading cycles. The rheological parameters were determined for the third cycle on the basis of the creep curves approximated by the Burgers model curves. The obtained rheological parameter values were used to calculate the depth of the ruts by means of the theoretical rutting model developed by the authors. The calculated rut depths were compared with the actual FPRT test measurements. It has been established that the Burgers model's coefficient of viscosity (η_1) and modulus of delayed elasticity (E_2) have the strongest influence on rutting. The ranges of the rheological parameters which determine rutting are given.

KEY WORDS: bituminous mixtures, rheological parameters, ruts.