

## INVESTIGATION OF THE PERFORMANCE OF CONVENTIONAL AND POLYMER MODIFIED BITUMEN

**M. Tušar, E.Šušteršič \***

\*National Institute of Chemistry, Hajdrihova 19 SI-1001 Ljubljana, Slovenia,  
marjan.tusar@ki.si

**B. Kalman**

VTI 581 95 Linköping, Sweden

### *ABSTRACT*

Work in SPENS (Sustainable Pavements for European New member States) project was divided into six working groups within each of them surveys were carried out in two or three tasks. In the frame of Task 4.1, we established the advantages and disadvantages of different types of paving grade and modified bitumen. Seven binders were included in the study. The binders were used to make asphalt concrete (AC) with either limestone aggregate or siliceous aggregate, stone mastic asphalt (SMA) and porous asphalt (PA) with siliceous aggregate. The binder test methods included in the study have been the standard test methods, the moduli obtained from the dynamic shear rheometer and the stiffness determined with a bending beam rheometer. Asphalt samples were tested on the wheel tracking, stiffness at different temperatures, water sensitivity and the Marshall stability at different temperatures.

The relations between asphalt mechanical properties and the mechanical and visco-elastic properties of the binder have been studied. The multivariate data analysis has been done with modern orthogonal projection methods, i.e. with the partial least squares (PLS) algorithm.

*KEY WORDS:* Asphalt, bitumen, partial least square method (PLS).