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## **COPE WITH PERMANENT DEFORMATIONS OF URBAN ROADS USING MODIFIED ASPHALT MIXES**

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### *ABSTRACT*

The present work is the outcome of a pilot study carried out by the Laboratory of Highway Engineering of N.T.U.A. with the aim to investigate the applicability of modified asphalt mixes for urban roads against pavement rutting. The chemical modifier used for the improvement of the mechanical properties of the new bituminous mixes was a copolymer of ethylene and vinylacetate specially selected. The final product was produced using the direct pugmill additional technique.

In order to check the quality of the end product in comparison with the mix design studies in the laboratory, further testing were carried out. To this end, samples from a trial production in the mix plant were taken and tested in the laboratory. Furthermore, some samples were taken during the paving. Finally cores were also taken from the rehabilitated pavement a few days after the traffic were restored. All the samples and cores were tested and checked both separately and in comparison with the demands of the mix design.

The laboratory tests on the modified mixes showed that the mechanical properties (stiffness, permanent, deformation) of the end asphalt mix product using the direct pugmill addition technique was very promising.

Finally, it was worth mentioning that a visual inspection of the rehabilitated pavement after nearly five years of performance provided excellent surface condition.

**KEY WORDS:** Deformation, rutting, asphalt mix modifiers, plastomers.