# MECHANICAL PROPERTIES OF ASPHALTIC CONCRETE TYPE A265-B WITH MODIFIED BITUMENS

by

A.F. NIKOLAIDES[1], G. TSOHOS[2]

## ABSTRACT

The addition of modifiers affect the properties of bitumen and as a result the properties of the bituminous mixtures. Modified bitumens are widely used in Europe and other foreign countries. In Greece they have not yet been used in hot bituminous mixtures.

The results presented here are from the first research study carried out in Greece. The parer examines the effect of four modified bitumens on the mechanical properties of asphaltic concrete type A265-B resulted mixtures. The modified bitumens produced in the laboratory with the addition of three elastomers under the commercial names Cariflex, Elastoren, and Styrelf and one oxidant Chemcrete. The conventional bitumen used was 80/100pen and 40/50pen from a greek refinery. The properties examined were the Marshall properties, Creep deformation and Indirect tensile strength, with and without curing stage. Additionally an investigation was carried out on the determination of optimum binder content in comparison to conventional mixtures as well as on the behaviour of "lean" and "rich" in bitumen mixtures with respect to their mechanical properties.

The results showed that, generally, the use of modified bitumens improve the resistance to deformation, the tensile strength and in one case (with Chemcrete) improve slightly the stability. The determination of optimum binder content is independent of type of bitumen. Better behaviour is expected from either lean or rich mixtures when modified bitumen used compared to the equivalent with conventional bitumen. The curing effect was only present on the mixtures with Chemcrete. Finally it must be stated that the degree of effectiveness of modifiers depends on its type.

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1 Senior Lecturer,
2 Professor,
Highway Engineering Laboratory, Dept.of Civil Engineering, University of Thessaloniki