

## LABORATORY RESULTS OBTAINED FOR AN AIRPORT ASPHALT MIXTURE

### **Constantin Romanescu**

Professor, Technical University of Civil Engineering Bucharest (TUCB)

### **Carmen Răcănel \***

Assoc. Professor, Technical University of Civil Engineering Bucharest (TUCB)

### **Claudia Petcu**

Assistant, Technical University of Civil Engineering Bucharest (TUCB)

\* TUCB, Roads and Railways Department, Bvd. Lacul Tei 124, RO-020396, Bucharest, Romania, carmen@cfdp.utcb.ro

### *ABSTRACT*

Flexible pavement structure must meet some conditions of operation, namely: stability, durability, fatigue resistance, impermeability and resistance to cracking.

Asphalt mixture used in the airport area, especially the area of taxiway and the apron must satisfy besides usually requirements for roads, some requirements related to resistance to fuel and de-icing agents according to European norms. Asphalt mix recipe for airport used for this research was designed according to French Norm NF P 98-131 and Manual French Design, because in Romania there is no such rule for designing asphalt mixtures. The study of asphalt mix recipe was done so with the Marshall, Superpave method and the results are very similar in terms of percentage of bitumen optimum result. For traffic that is properly designed asphalt mixtures load calculation for airports and fit for a traffic volume of between  $2.1 \times 10^6$  and  $21 \times 10^6$  axles 115KN (very heavy – exceptional traffic, romanian axles).

The purpose of this paper is worth putting the characteristics of airport asphalt mixture according to European Standard SR EN 13108-1 as "Asphalt Concrete". The results are presented as graphs and tables considering general and empirical requirements for this type of mixture.

**KEY WORDS:** Mix design, airport, stiffness, fatigue, permanent deformation