

## **INFLUENCE OF RECLAIMED ASPHALT CONTENT ON ASPHALT MIX CHARACTERISTICS DOPED BY SELECTED REJUVENATORS**

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### *ABSTRACT*

The application of increased quantities of reclaimed material in asphalt mixes is a trend whose importance has been growing steadily in recent years. Along with this approach it is needed to find solutions in which reactivated bitumen in the reclaimed asphalt pavement (RAP) will not have any negative impacts on mixture durability. The durability can be affected primarily by the rate of degradation of bitumen contained in the RAP. An important aspect is therefore the quantity of the reclaimed asphalt added to the asphalt mix. For the assessment of these effects in combination with selected types of rejuvenators and their influence on asphalt properties, asphalt concrete AC11 was selected as a suitable representative. Three levels of RAP in the AC mix were proposed: 20%; 35 % and 50 %. From the perspective of chemical additives, rejuvenators of a new product series developed by a Czech refinery, as well as existing Italian or German products were selected. Further Indian and U.S. additives were applied which are used mostly in the field of warm mix asphalt. Last but not least industrially produced binder for mixes with high RAP proportion was assessed as well. The additives were appropriately combined with the selected RAP contents. Various percentages of the additives were applied and different combinations created with varying quantities of additional new bituminous binder. The mixes were compared to one another according to the tests commonly applied in the Czech Republic (mainly moisture susceptibility, stiffness determination, rutting test and assessment of behaviour in low temperature range). The results of the conducted laboratory study are presented in this paper.