

CONFERENCE

ASPHALT PAVEMENTS 2023

Let's asphalt out of the crisis

28–29 November 2023, Czech Republic

AV '23

Construction, maintenance and rehabilitation of asphalt pavements

General reporter **Petr Hýzl** will present a total of 11 contributions in his report (authors: Jan Filipovský, Vítězslav Křivánek, Josef Stryk, Petr Hýzl, Samir Irzayev, Olivier Fleischel, Martin Fliegl, Vlastimil Nevrkla, Tomáš Koudelka, Markus Spiegl, Eva Králová), which can be divided into three main groups: asphalt binders – properties and behaviour of their modifications; asphalt mixtures and layers – modifications of standard mixtures and layers + paving technology; surface pavement properties.

6 papers were selected for oral presentation and will be presented in two blocks:

→ Innovative chemistry for sustainable asphalt pavement

(Olivier Fleischel)

A new chemical additive for bitumen modification, called B2Last®, has been developed by BASF and tested in the laboratory of the Institute of Highway Engineering at RWTH Aachen in Germany. The additive has demonstrated to provide excellent workability as well as performance benefits for the asphalt mixtures. Large-scale trials have shown that this additive can improve the affinity/adhesion between binder and aggregates, enable temperature reduction during production and construction of asphalt mixtures while increasing the performance against rutting and fatigue failure. The low temperature properties of the mixture remained unaffected. B2Last utilization is not only limited to warm mix asphalt production and can be used in hot mix asphalt as well. It has been demonstrated that such additive can substitute a large portion of polymers in Polymer modified Bitumen (PmB), but also in Highly Modified Asphalt (HiMA).

→ Asphalt emulsions, how to set relevant tenders' requirements in the Czech Republic (Tomáš Koudelka)

Tenders for the supply of asphalt emulsions are issued every year in the Czech Republic. The tenders most often concern the supply of quick-setting emulsions, which are used, for example, for tack coats (specified in ČSN 73 6129) or for the jetpatcher method (specified in TP 96). The requirements on emulsions are often insufficiently or unclearly defined in some tender documents. The aim is to highlight the shortcomings that appear in some tenders. At the same time, the relevant functional characteristics of asphalt emulsions or products made from them are presented and described in the paper. These characteristics can be used to define the required level of performance easily and clearly.



Michal Varaus



Petr Hýzl



Olivier Fleischel



Tomáš Koudelka

→ Evaluation of the behaviour of RC binder on the trial sections in the Czech Republic (Markus Spiegl)

The author's paper discusses the properties of OMV Starfalt® PmB 45/80 RC asphalt binder developed by OMV, intended to be used for the recycling purposes of reclaimed asphalt mixtures (RAP). The binder is characterized by various adjusted properties like higher needle penetration, higher softening point, higher elastic recovery (closed to 95-100%), with the aim to compensate the properties of the aged binder contained in the reclaimed asphalt. Two experimental sections were laid in the Czech Republic to support innovative technologies funded by SFDI (State Fund for Transport Infrastructure) in 2015. Monitoring was performed on these sections for a period of 8 years with a consecutive analysis of the properties of the used binder in cooperation with the Brno University of Technology.



Markus Spiegl

→ AC Duopave – the two-in-one asphalt pavement concept (Samir Irzayev)

Regional and communal roads with lower traffic volume form a major part of the overall road network in Germany. These roads carry multiple loads as a result of the daily supply of small towns and villages and are significantly damaged by climate conditions, especially during long winter periods. Road maintenance is a burden for the budgets of federal states, cities, and local communities. It is therefore necessary to look for high quality technical solutions which are also more favourable to public finances.



Samir Irzayev

→ Long-term changes in road surface noise over time (Vítězslav Křivánek)

The importance of the road surface and the condition of the road in terms of the overall noise generated by road traffic is increasing. The assessment of acoustic changes in road surfaces is carried out in Europe using the internationally proven CPX method, which is also applied within the legislation in the Czech Republic. Updating and supplementing the TKP 7 regulation based on TP 259 was done based on partial research findings. However, the results are still incomplete, so one of the complementary objectives of the research project CK04000058 (VIBRUČ) is to further describe the long-term changes in road surface noise over time.



Vítězslav Křivánek

→ Skid resistance properties of asphalt pavement surfaces – their evolution in time (Pavla Nekulová)

The paper is a follow-up to the paper in journal Silniční obzor No. 12-2021 and 12-2022 and focuses on how the evolution of skid resistance properties of pavement surfaces can be monitored over time. The article presents longitudinal friction coefficient values for the most commonly used pavement surfaces and why it is so important to make measurements sometime after the pavement has been placed in service. The paper also introduces a new version of the TRT device that is used to measure the skid resistance properties of pavement surfaces.



Pavla Nekulová

Michal Varaus, moderator of the topic Construction, maintenance and rehabilitation of asphalt pavements



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