

Performance-Related Specifications for Hot Asphalt Mixes



Background

Road construction and rehabilitation need high amounts of public investment. Their costs are heavy to bear for all governments worldwide. The most cost sensitive component of this kind of projects is the layers treated with asphalt and cement. Most of the major roads in Tunisia are built with a wearing coarse and a base coarse with asphalt treated material namely Hot Mix Asphalt (HMA). Despite the investment, roads in Tunisia do not stand as shown in the above figure. We do believe that we have some thing wrong in our mixes. But, no one figured a lasting solution so far. Appropriate solution needs an assessment of the performances of the actual mixes which are not available in emerging economies such as Tunisia. Then, enhanced mixes need to be modeled in lab before building roads with it.

Project scoping

HMA performance tests include rutting resistance, complex modulus and fatigue resistance tests. These tests require advanced tools/ machines to run them which are not available in most of the emerging economies. Through this collaborative project, the Austrian partner, TU Wien, has given the opportunity to the Tunisian partner, UTM, to test for the first time the performances of the actual HMA mixes used in Tunisian road construction projects in order to find out how these mixes actually perform. Subsequently, solutions will be determined for having a good HMA taking Tunisia's climate conditions into account. These well-performing HMA will be tested again in Austria with the aim of proving the efficiency of the new mixes and paving the way for implementation in Tunisia. The picture shows some of the machines used in this project.



Project milestones

Numerical modelling of the improved HMA mixes regarding mechanical features

Improved HMA mix designs

Shipment of 3 tons of aggregates and 250 kg of bitumen from Tunisia to Austria

Performances assessment of Tunisian HMA mix

Performances assessment of the improved HMA mixes



Project Team

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