

## **INVESTIGATING RHEOLOGICAL EFFECTS OF WMA ADDITIVES BY MEANS OF A VISCOMETER AND A NEWLY DESIGNED WORKABILITY DEVICE**

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### *ABSTRACT*

The objective of this study is to analyze the effects of organic and inorganic warm mix asphalt additives on bitumen viscosity by ring and ball softening point device, rotational viscometer and workability device. Sasobit and Aspha-min are used as commercial organic and inorganic additives, respectively. Viscosity experiments are the first step of the laboratory stage, to determine the changes in bitumen characteristics caused by adding warm mix asphalt additives. Viscosity measurement is an appropriate method for organic and chemical additives as they can finely disperse and show their effect directly in bitumen. However, effects of inorganic additives on bitumen cannot be monitored by means of a viscometer. Due to this reason, a workability device was designed to measure the contribution of the additive to bitumen by measuring torque changes with adjustable temperature, time and mixing speed.