

## **The effect of fine aggregate gradation and filler type on the rheological properties of asphalt**

### **ABSTRACT**

Fine aggregates provide sufficient stability for asphalt mortars, helping to build up good interlocking characteristics and supporting load capacity for asphalt mixtures. Fillers such as ordinary Portland cement and hydrated lime can improve the rutting resistance and moisture susceptibility of the asphalt mixtures. In this study, the influence of aggregate gradation and filler type on the rheological properties of asphalt mortars was evaluated through a series of laboratory tests. Different asphalt mortar samples were fabricated using two aggregate gradations (median and lower level of fine aggregates) and two different fillers (ordinary Portland cement and hydrated lime). Test results showed that the addition of ordinary Portland cement and hydrated lime can stiffen the asphalt mortar, with hydrated lime showing higher stiffness values compared to ordinary Portland cement. Asphalt mortars with a median aggregate have higher  $G^*/\sin\delta$  values compared to asphalt mortars with a lower limit aggregate gradation.