Geophysical Research Abstracts, Vol. 9, 07139, 2007
SRef-ID: 1607-7962/gra/EGU2007-A-07139

Impact of mica content on water sensitivity of asphalt concrete

K-J. Loorents and S. Said
VTI, Sweden, karl-johan.loorents@vti.se / Fax: +46 13 141436

It is well known that mineral fillers have an important influence on the properties of bituminous mixtures. There is a wide variation in the properties of filler depending on the type and the nature of mineral filler. Fine aggregate with a high content of mica is common in Swedish crushed rock aggregates. Filler material with a high content of mica is normally avoided for use in asphalt mixtures. Presence of mica in the filler material has experienced to reduce the asphalt concrete resistance against water influence and freeze and thaw cycles. The purpose of this work is to clarify the effect of free mica in the filler material on the durability of bituminous mixtures. Using filler with high content of free mica in comparison to filler with poor content of mica will results in tremendously increase of the total surface area of aggregate, which is intended to be covered by a bitumen film. It is concluded that making mix design in respect to surface area of the filler will almost vanish the disadvantage of using mica in production of asphalt mixtures. It will also results in using less amount of mineral filler.