

RELATIONSHIPS BETWEEN RHEOLOGY OF MIX AND BINDER. APPLICATION TO HIGH MODULUS MIXES.

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ABSTRACT

The relationships between fundamental properties of High Modulus Mixes and their binder were studied. It was found that one of the most important aspect to take into account is the fatigue behaviour of the mix. This point is governed, among others, by the loss tangent angle of bitumen. As a consequence of this work is clearly established that not only is important that bitumens for use in High Modulus Mixes have G^* high enough, but also a loss tangent angle low enough to avoid fatigue problems. Some values for Modulus and angles of binders are proposed:

$$G^* \geq 10 \text{MPa} @ 10 \text{ Hz and } 20^\circ\text{C}$$
$$\alpha \leq 30^\circ @ G^* = 10 \text{ MPa}$$

KEY WORDS: High Modulus Bituminous Mixes; Hard Bitumen; Fatigue Behaviour; Complex Modulus; Loss Tangent Angle.