

DEVELOPMENT OF A NEW AGGREGATE-BINDER ADHESION TEST METHOD

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ABSTRACT

Adhesion in asphalt mixtures can be defined as energy required to fracture the adhesive bond between binder and aggregate causing isolation from each other. The main objective of this study was to develop a simple, practical and reliable laboratory adhesion test method enabling direct measurement of the adhesive bond strength of binder-aggregate systems. The adhesion results were subjected to comparative analysis to determine the effect of various variables and parameters. Four binders: two conventional and the other two are their polymer modified varieties, and two types of aggregate, were used to arrive at standardised testing conditions. When the binder thickness increased, the failure transitioned from adhesive to cohesive accompanied by a decrease in the maximum tensile load at failure. Practical work of adhesion decreased with increased testing temperature but the largest decrease was due to moisture conditioning, which increased with increase in loading rate.