A LABORATORY METHOD FOR THE ASSESSMENT OF CHIPPING RETENTION BY SURFACE DRESSINGS WITH POLYMER MODIFIED BINDERS

by

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1. Introduction

Surface dressing has gained a recently increased appreciation by highway engineers as a routine non-structural maintenance measure used on U.K. roads of varying traffic intensities. This appreciation has arisen by virtue of the cost effectiveness of surface dressing in restoring the skid resistance which has been lost due to aggregate polishing, chipping loss/embedment or fatting up. Despite the widespread use of surface dressings in the U.K. (and indeed Europe) its design method as set out in Road Note 39 falls short of comprising a rational approach in arriving at the final product to be used. Furthermore, the increased use of non-conventional binder types has rendered the guidance given in Road Note 39 not as comprehensive as one would have hoped, since this places too much emphasis on manufacturers' instructions for the use of these binders.

It is common knowledge among practising engineers that the success of surface dressing operations depends predominantly on the material remaining in place during the first few hours after it has been laid.
Unfortunately, there exists no assessment means to evaluate the resistance of the laid system to chipping loss and dislodgement, especially during the early and most critical stages of the surface dressing life. Premature failure of the material can lead to extensive windscreen damage and to delays due to the build-up of long tailbacks.

This paper attempts to study some of the important factors that affect the performance of surface dressings in the laboratory, with particular reference to their behavioural aspects during the early stages. The Mini Fretting Test is suggested here as one possible design and assessment tool that can be used to study the influence of curing period, test temperature, binder type and surface dressing type on their performance.