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## EFFECTS OF USING STYRENE-ISOPRENE-STYRENE AND CRUMB RUBBER ON RUTTING POTENTIAL AND AGING PROPERTIES OF BITUMEN

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### Abstract

The crumb rubber (CR) obtained from waste vehicle tires is gaining attention from the researchers because of its contribution to performance besides having low cost and environmental-friendly characteristic. In this study the effects of using styrene-isoprene-styrene (SIS) together with CR on rutting and aging properties of binders were evaluated by dynamic shear rheometer, softening point and viscosity tests. B 160/220 (PG 58) pure bitumen was modified in 13 different combinations with different contents of additives. The combined use of SIS and CR was compared with the high rate of SIS and CR modifications individually. It was determined that the combined use of 2% SIS and 7% CR by weight of bitumen provides an economical and superior performance that cannot be achieved with individual SIS or CR modifications. The binary binders were able to preserve their elastic properties after aging better than the individual SIS and CR modifications.

*Key words:* aging, bitumen, crumb rubber, rutting parameter, styrene-isoprene-styrene

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