

EFFECTS OF ANTI-STRIPPING AGENT ON WARM POROUS ASPHALT INCORPORATING SASOBIT®

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ABSTRACT

The asphalt industry is making constant efforts to minimize energy consumption and reduce emissions by lowering production temperature, made possible by incorporating warm asphalt additives. This paper presents the results of a laboratory evaluation of the resistance to stripping of porous asphalt incorporated with 1.5% Sasobit® with two anti-stripping additives, namely a conventional hydrated lime and a newly developed filler known as Pavement Modifier. The specimens were compacted at various temperatures and stripping was accelerated using a specially designed dynamic stripping machine. Stripping was further accelerated by incorporating sodium carbonate in the permeant that permeated through the specimen at 40°C for 48 hours. The dry specimens were conditioned in an incubator at 20°C for the same period of time. Upon subjected to dynamic stripping, the indirect tensile test was carried out at 20°C on both samples to evaluate the stripping resistance based on the indirect tensile strength ratio (ITSR). It was found that the ITSR decreased as the compaction temperature decreased, while the air voids increased as compaction temperature decreased. Based on the test results, mixes incorporating PMD filler has the potential to improve resistance to stripping compared to mixes with hydrated lime regardless of compaction temperature.

KEY WORDS: Dynamic Stripping, Anti-stripping additives, Sasobit®