

SHELL *THIOPA*TM SULPHUR EXTENDED ASPHALT MODIFIER

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ABSTRACT

Sulphur-extended asphalt has been available since the 1970s, but was not widely taken up because the cost of sulphur increased to make this modifier uneconomical. The cost has now reduced and Shell has produced sulphur in a pelletised form, Shell ThiopaveTM (previously Shell SEAMTM), that eases the application and minimises the potential health and safety issues. A review of laboratory tests and site trials that have been undertaken with the product assesses the changes in technical properties that are achieved with mixtures incorporating it at rates of between 20 % and 40 % by mass of the binder. The review found that the pelletisation of the sulphur by Shell in its *Thiopave*TM product appears to have overcome many of the health and safety fears, although strict control of temperature is important. The effects included increasing Marshall stability, reducing wheel-tracking and increasing the stiffness modulus. The temperature of the mixture has to be reduced to become a warm asphalt. Thus, its wider use is more practical, as is demonstrated by its use on several reported sites.

KEY WORDS: Sulphur, warm asphalt, Marshall stability, wheel-tracking, stiffness modulus