

Laboratory Evaluation of Malaysian Cellulose Oil Palm Fiber for Use in Stone Mastic Asphalt Mixes

ABSTRACT

The primary agricultural product of Malaysia is palm oil. As a result, some two million tons of empty fruit bunch wastes are being dumped behind palm oil mills every year. This is causing serious environmental problems. This paper discusses a study undertaken in 1996 to look into the suitability of the Malaysian oil palm fiber in Stone Mastic Asphalt (SMA) mixes. The oil palm fiber was analyzed and compared with other traditional European fiber that is commonly used in gap-graded mixes. Several experiments were carried out on the fiber including the Fiber Drain Down Test (FDDT) and Morphological analysis using Scanning Electron Microscope (SEM). Besides this, chemical analysis was also carried out with a variation of cellulose content and particle size. The results of the laboratory analysis showed that the Malaysian Cellulose Oil Palm Fiber (COPF) has great potential to be used in SMA mixes.