

Physical properties of palm oil boiler ash modified bitumen with Rediset

ABSTRACT

This study examines the physical properties of a 60/70 penetration grade bitumen modified using warm mix asphalt (WMA) additive, Rediset and palm oil boiler ash (POBA) as a modifier. Modified binders were prepared by adding 2% of Rediset with different POBA contents (3, 5, 7, and 9%) through wet mixing process. Physical properties of modified bituminous binder were obtained from penetration, softening point, rotational viscosity and ductility tests. The addition of 7% POBA in WMA binder has the best characteristics in term of its physical properties. The penetration values, softening point temperatures and ductility characteristics show inconsistent patterns. However, the rotational viscosity of each combination had decreased with the increment of temperature even though the trend was not significantly constant. Penetration index (PI) showed an increment with 3 and 5% and decrement pattern on 7 and 9% as well as penetration viscosity number (PVN) showing an inconsistent decrement with the addition of POBA. From the results, it can be concluded that using POBA in WMA binder for pavement construction is a viable option and can be further investigated.