

Rheology of waste paint blended binders

ABSTRACT

Malaysia is spending Millions of dollars on the treatment and disposal of rejected paints from the manufacturing plants. A research was undertaken at university Putra Malaysia to look into the potential of using the waste oil paints as modifiers to certain percentage without compromising the minimum required physical properties of asphalt binders such as viscosity, penetration and softening point. Since oil paints are hydrocarbon in nature, the blending of paint in asphalt binders did not pose any problems in the homogeneity of the paint modified binders. Various proportion of paint was blended with 3 different asphalt binders namely the 80-100, 60-70 and PG 76 binders. The study showed that The 80-100 and 60-70 binder types can be modified with oil paint up to 5% and still comply with the minimum requirement set by Ministry of Public Work (JKR) Malaysia, while the PG 76 binder can be modified with waste oil paint up to 10% meeting the minimum physical properties requirement. Thus it is concluded that a large amount of waste oil paint can be incorporated in the road construction and thus saving huge sum of money spent on the treatment and disposal of the waste oil paint. This effort is also geared towards minimizing environmental problems due to the dumping of such toxic waste.

Keyword: Waste oil-based paint; Asphalt; Viscosity; Penetration; Softening point