

Use of polyethylene terephthalate as an Anti-stripping agent in GLASSPHALT

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Abstract

This study evaluates the use of polyethylene terephthalate (PET) in Glassphalt aimed at increased bonding effect of bitumen, reduced stripping and increased in stability and strength. Control mix were prepared with bitumen content of 5.0, 5.5, 6, 6.5 and 7% to determine the optimum bitumen content (OBC). Optimum glass content (OGC) was obtained from samples prepared with glass content of 5, 10, 15, 20, and 25% replacement by weight of fine aggregates. The OBC and OGC were used prepare samples with PET content of 2, 4, 6, 8, and 10% by weight of the OBC. The optimum PET content had a higher stability value of 5.8kN and higher air void of 3.8% when compared to the control mix. Stripping value tests showed that PET modified glassphalt had 0% stripping after a period of 48 hours. Waste PET of 6.6% in 16% glassphalt is recommended for use as an anti-stripping agent.

Keywords: Strength properties, Waste glass, Hot Mix Asphalt, Glassphalt, Polyethylene Terephthalate, Optimum glass content, Optimum PET content

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