MODIFICATION OF ASPHALT CONCRETE USING FLY ASH AND WASTE PLASTIC

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ABSTRACT
The effect of modifying asphalt concrete using fly ash and recycled HDPE plastic is reported. This was added to 60/70 penetration grade bitumen and its effect on penetration at 25, 30, 35 and 40^0C, softening point and Penetration Index determined. This showed that addition of both wastes could be used to modify these properties. Marshall design was used to evaluate the effect of the waste / bitumen blends on mix properties. The mix data showed that the addition of both waste materials could improve performance of the asphalt concrete. Greatest improvement was with the addition of waste HDPE plastic. The paper concludes that simple bitumen and Marshall design values can be used to determine the probable effect of waste addition. This is important as these methods are still widely used in many countries.

KEY WORDS: Fly ash, HDPE waste plastic, Marshall design