



**RHEOLOGICAL PROPERTY AND THERMAL STABILITY OF POLYETHYLENE/ISOBUTENE/BITUMEN BLEND**

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The main objective of the present work was to modify 60/70 penetration grade bitumen by using a polyethylene/isobutene modifier and glycidyl methacrylate (GMA) as a compatibilizer. The composite samples varying in modifier loadings (5, 7 and 10%wt.), but the same modifier/compatibilizer ratio were considered. All the samples were prepared by melt compounding in an internal mixer. The storage stability analyses performed on the modified samples showed an appreciable increase in the sample's stability which was attributed to the network structure formed due to interaction of epoxy ring of GMA with functional groups of bitumen. The melt linear viscoelastic result revealed that the polymer modification increased composite binder elastic response at high in-service temperature by largely increasing PE elastic and viscous properties in this temperature region. The modified samples also performed significantly better on low temperature since isobutene shifted the glassy region to much lower temperatures. The sample modified with 7%wt. of modifier exhibited optimum effectiveness on rheological properties; the behavior which was suitable for roofing and waterproofing systems rather than paving application.