

ELASTOMER MODIFIED BITUMEN AND ITS VERSATILE APPLICATIONS

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ABSTRACT

The volume of polymer-modified asphalt (PMB) has been continuously increasing mainly in order to improve the resistance to the permanent deformation at locations where heavy traffic is expected. If the right type of a polymer modifier is chosen the flexibility of the asphalt at low temperatures will also be improved. The combination of these improvements leads to more durable road constructions. Thus, the slight increase in the initial cost is compensated by the increased life expectancy and the low maintenance costs afterwards. The other application for PMB is for some special projects, such as the airfield and the noise-reduction asphalt, where the ordinary penetration bitumen cannot fulfil the requirements.

It has been demonstrated that elastomer modified bitumen (EMB) does not only improve the resistance to rutting at high temperatures, but also increase the resistance to cracking at low temperatures and cracking due to fatigue. Therefore, EMB is the most widely used type of modified bitumen in the world. A well-known example of the polymer modifier is SBS. The paper first introduces 3 types of polymer-modified bitumen and then presents some practical applications of EMB product.

KEY WORDS: Polymer-modification bitumen, asphalt, rutting, fatigue, cracking