



## The effect of different polymers on bitumen and asphalt properties

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### Abstract

*In recent years, polymer-modified bitumens have been used to produce asphalt mixtures with better corrosion resistance, fatigue cracks and heat cracks. Research in recent decades has shown that the use of polymers in asphalt mixtures improves their properties and delays breakdowns. The important role of pavement quality on the safety and comfort of road users, as well as reducing the costs of the operation period, has led researchers in the field of asphalt pavement to produce modified asphalt, to increase its strength and durability in Take action against traffic loads and various weather conditions. Deficiencies related to pure bitumen produced in refineries lead to premature failures in asphalt pavements. Various additives have been used to modify the behavior of bitumen, including a variety of polymers. In fact, polymers are among the bitumen modifying additives that are widely used in asphalt mixtures today. In this study, reviewing previous research, the need to modify the properties of bitumen will be explained. In the following, various methods of bitumen properties modification are introduced and then the types of bitumen polymer modifiers and the role of each of them in improving the properties of bitumen and asphalt mixtures will be explained.*

### Keywords:

*Bitumen ,Polymer Additives,Asphalt Mixtures,Elastomers,Styrene Polymer ,Butadiene Styrene.*