

## عنوان مقاله:

Investigating the Effects of Temperature and Loading Frequency on the Resilient Modulus of SBS Polymer Modified Asphalt Concrete in Dry and Saturated Conditions

## محل انتشار:

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## خلاصه مقاله:

Resilient modulus of pavement materials is a key property required for the pavement thickness design. This paper describes the results of an experimental study on the effects of temperature and loading frequency on the resilient modulus of a SBS polymer modified asphalt concrete under dry and saturated conditions. Dynamic creep tests were conducted on dry and saturated specimens of the mixture over a range of temperatures (-5, 5, 20 and 40°C) and loading frequencies of 0.5, 1, 5 and 10Hz, and the variation of resilient modulus with the number of loading cycles has been evaluated. The results show that, in dry condition, the resilient modulus increases with increasing loading frequency, while, in saturated condition, a slight increase of resilient modulus with loading frequency was observed only at 40°C. It is also found that, in both the dry and saturated conditions, the effect of loading frequency on the resilient modulus decreases with decreasing temperature. Therefore, the temperature of 40°C was recommended for investigating the effect of loading frequency on the resilient modulus. In addition, a three-stage model was used for the resilient modulus. It is found that the logarithmic function is more appropriate for prediction of resilient modulus in stage 1.

## کلمات کلیدی:

SBS polymer, resilient modulus, asphalt concrete, moisture damage

## لینک ثابت مقاله در پایگاه سیویلیکا:

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