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Chemical change of the asphalt properties by water effect

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This research studies the effect of water on the AC 80-100 asphalt. The bitumen was evaluated under the action of water and its rheology was assessed through tests with the dynamic shear rheometer. Physical performance was evaluated by conventional empirical tests that included penetration, softening point, ductility and viscosity. The chemical tests were evaluated on liquid chromatography (fractionation SARA) and infrared spectroscopy. The results showed that water has a significant influence on the physical, visco-elastic and chemical properties of asphalt. Rheological properties showed a sinusoidal value of |G*| also changes the asphalt δ angle exposed to water. Chemical properties showed important changes in the activation energy of asphalt and consequently emerged some functional groups that are evidence of asphalt aging such as sulfoxides and carboxiles.

Recent Publications

1. Figueroa Infante A S and Reyes Lizcano F A (2015) Moisture damage analysis for an asphalt mixture through the mist test and the IPAS 2D(r) software. *Infraestructura Vial*; 17(30): 31-39.
2. Infante A S F and Santanilla E F (2015) Estudio de material reciclado para reparar fisuras y su aplicación en un pavimento en Bogotá. *Epsilon*; (24): 89-121.

Biography

Ana Sofia Figueroa Infante has her expertise in evaluation of materials and different process for improving its behavior in asphalt mixtures that are essential in flexible pavements. Her research is based on recycling materials reuse and the analysis of environmental effects on pavements, such as water, moisture and others to choose some environmentally friendly and technical solutions based on lower costs.

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