

عنوان مقاله:

Modification of bitumen properties, using polymeric modifiers

محل انتشار:

اولین همایش بین المللی قیر (سال: 1387)

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نویسندگان:

S.H Emami - (The article will be presented by A.Jafar abadi) Q.C. and R&D Laboratory of Jey oil co. – Isfahan, Iran

.G Afshari - (The article will be presented by A.Jafar abadi) Q.C. and R&D Laboratory of Jey oil co. – Isfahan, Iran

A Sharifzadeh - (The article will be presented by A.Jafar abadi) Q.C. and R&D Laboratory of Jey oil co. – Isfahan, Iran

.E Rezaei - (The article will be presented by A.Jafar abadi) Q.C. and R&D Laboratory of Jey oil co. – Isfahan, Iran

خلاصه مقاله:

In this research, modifying the characteristic of asphalt by mixing the additive "JA1" has been tested. In first step, JA1 was studied by FTIR, DSC and Congealing Point and Ash Content tests. The results and also peruses done in "Q.C. and R&D Laboratory of Jey Oil Co." and "Isfahan Science & Research City" shows that JA1 is a long-chain aliphatic hydrocarbon with a molecular chain length lies in the range of 40 to more than 115 carbon atoms. The melting point of JA1 is between 85 °C - 115 °C. This component is totally metallic ash free and contains Oxygen, Nitrogen, Chlorine and Sulfur. JA1 is completely soluble in bitumen at temperatures in excess of 115 °C. It forms a homogeneous solution with base bitumen on stirring and produces a marked reduction in the bitumen's viscosity. In next step, some samples were made with variable percentage of the modifier and tests showed the following results: 1- In all cases so far evaluated, the optimal addition of JA1 has been found to 3% taking the additives effectiveness and the overall economics into account. 2- Increment of the Softening Point. 3- Increment of the Ductility. 4- Decrease the temperature sensibility. 5- Decrease the Penetration. 6- Decrease the Fraass Breaking Point. 7- Due to decreasing the temperature of mixing the asphalt with aggregate about 10-30 °C, fuming would be stopped. 8- The resultant bitumen-JA1 blends are completely stables during hot storage exhibit no tendency for phase separation. It should be mention that many bitumen additives would damage some basic characteristic, but JA1 improve almost all the properties of asphalt. Keywords: Modifier, Polymer, Modified bitumen

کلمات کلیدی:

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