

## **STATISTICAL ANALYSIS OF CHARACTERISTICS OF SLOW BREAKING CATIONIC EMULSIONS USED FOR COLD WASTE ASPHALT RECYCLING**

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### *ABSTRACT*

Bitumen emulsions could be presented as a dispersion of bitumen particles in water, stabilized with the addition of surfactants – surface active agents – or most commonly known as emulsifiers that allow the bitumen to be "diluted" in water. Cationic emulsions - the term cationic is derived from the migration of bitumen particles under an electric field, the droplets migrate toward the cathode (negative electrode), and hence the emulsion is called cationic. This imparts a positive charge to all the droplets. Since positive particles repel each other, all the droplets repel each other and remain as distinct bitumen drops in suspension. Statistical analysis of these complex chemical processes allows highlighting the influence of different parameters on these emulsions. This paper presents five cationic emulsions used as additives in cold waste asphalt recycling. Natural aggregates, cement and fly ash are added to the emulsion in order to improve the quality of the recycled mix.