

## WATER RESISTANCE OF ASPHALT MIXES WITH SPECIAL SBS

**Erica Jellema \***

Scientist at Kraton Polymers Research, PO Box 37666,  
1031 HL Amsterdam, The Netherlands, erica.jellema@kraton.com

**Willem Vonk**

Kraton Polymers Research B.V., Amsterdam, The Netherlands

**Robin van Veldhuijsen**

Kraton Polymers Research B.V., Amsterdam, The Netherlands

**Erik Jan Scholten**

Kraton Polymers, The Netherlands

**Rombout Hartemink**

Kraton Polymers, United Kingdom

### *ABSTRACT*

Polymer modified asphalt is capturing an increasing share of the global asphalt market and accounts for at least 15% of market share today, with the largest share for SBS. Although SBS is widely used for its mechanical and rheological advantages, its beneficial effect on resistance to water and stripping in asphalt mixes has received relatively little attention. On the basis of its characteristics and chemistry, initial expectations may be low, but based on positive market feedback, we started a study on the contribution of SBS to water resistance.

In experiments with stones adhering to a thin layer of (modified) bitumen (chip seal) and asphalt mix tests (direct and retained Marshall), the positive effect was confirmed. In addition, it was demonstrated that by altering the nature of the SBS mid-block, water resistance was improved further.

In this paper, the test results are discussed and it is demonstrated that such asphalt mixes provide options for successful applications in areas where water drainage from the road structure is not assured.

*KEY WORDS:* SBS, drainage, water resistance, asphalt.