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Movement Characteristics of Aggregates in Asphalt Mixtures during the Wheel Tracking Test

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The deformation characteristics of asphalt mixtures in the crossing direction during the wheel tracking test (1 h, 2500 passes) at high temperature were investigated using dense graded (13F) and drainage asphalt mixture. The two-dimensional movement of the aggregates due to the wheel load was analyzed by right angle photography of the specimen. The behavior of the aggregates was divided into three stages (first, second, and final stage). The aggregates in each mixture moved in the vertical direction under the load, which reflects consolidation of the asphalt mixture. The aggregates moved in the horizontal direction on the surface near the load, which reflects the flow of the asphalt mixture. The aggregates also moved with rotation in both regions. The net result was absence of movement. In addition, the volume change of the asphalt mixture caused by deformation of surface was closely related to the deformation just under the load in the first stage. The asphalt mixture after the wheel tracking test was cut to measure the density. The results showed that the density increased just under the load and decreased in the upper part of the surface near the load.

Keywords: [Asphalt mixture](#), [Deformation characteristic](#), [Wheel tracking test](#), [Movement characteristic](#)



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