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## **New Test Method for Moisture Permeation in Bituminous Mixtures**

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Water-related damage to bituminous pavement is considered to result from penetration of liquid water from the surface and/or subsurface. However, surface courses made of bituminous material such as runway pavements are usually not permeable for liquid water. Therefore, such phenomena may be caused by moisture vapor in the air. A new moisture permeation test apparatus was developed to analyze the mass transfer. Moisture permeation tests under typical hot summer conditions suggested that atmospheric moisture permeates and accumulates in bituminous mixtures through mass transfer by vapor diffusion despite the water impermeability of bituminous surface mixtures. The moisture permeation test provides an effective approach to analyze water storage mechanisms and moisture-related phenomena such as blistering in bituminous mixtures, although the test apparatus and condition settings require some improvement.

**Keywords:** [Bituminous mixture](#), [Moisture damage](#), [Blistering](#), [Moisture permeation](#)



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