

INFLUENCE OF RECLAIMED ASPHALT CONTENT ON THE COMPLEX MODULUS OF CEMENT BITUMEN TREATED MATERIALS

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ABSTRACT

The objective of this study was to characterize the volumetric and stiffness properties of cold-recycled mixtures treated with bituminous emulsion and cement, produced using different reclaimed asphalt percentages (50%, 80% and 0%). In the first part of the experimental program, volumetric properties and compactability were analyzed using a gyratory compactor. In the second part, the complex modulus was measured by means of cyclic compression tests, on cylindrical specimens. A conventional frequency sweep procedure was followed in a range of service temperatures. The strain level was chosen focusing the attention on the linear domain. The experimental results showed that complex modulus was influenced by frequency and temperature similar to hot mix asphalt. In addition, the time-temperature superposition principle was verified only for the absolute value of the complex modulus but not for its phase angle. Results also showed the influence of bituminous and hydraulic mortars on the rheological response.