THE MIX GRADATION INFLUENCE ON THE PERMANENT DEFORMATIONS RESISTANCE OF COMPACTED WMA

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ABSTRACT
Along with the increase of road traffic and loads, arises the need for a methodology for studying and predicting the rutting resistance of asphalt concretes. The growth of this phenomenon on the asphalt pavement is directly connected with the layers' structural damage and it is reflected in terms of safe riding. An accurate laboratory characterization of the material rutting performance is desirable, aiming to reduce the distresses during its lifetime and to predict the mixture tendency to develop excessive permanent deformations under repeated heavy traffic loading.

This paper reports a case study concerning the evaluation of the mechanical characteristics of two Warm Mix Asphalts (WMA). A unique binder type was adopted to reduce the number of variables, since it is known that one of the primary cause which engender the rut distress is the plastic behavior of the binder. These analysis were carried out with different tests setup complying with the EN 12697-25 requirements, varying stress level, but keeping constant temperature, loading type and time.

KEY WORDS: Permanent deformations, Dynamic Creep, WMA, Mix Gradation