

MASTER CURVES OF RUTTING FACTOR FOR BITUMINOUS BINDERS

M. Agostinacchio *

Full Professor of Roads Railways and Airports, University of Basilicata.

D. Ciampa, PhD

Assistant Professor of Roads Railways and Airports, University of Basilicata.

M. Diomedì

Associate Professor of Roads Railways and Airports, University of Basilicata.

S. Olita, PhD

Assistant Professor of Roads Railways and Airports, University of Basilicata.

* University of Basilicata, Department DAPIT, Viale dell'Ateneo Lucano 10, 85100 Potenza, Italy, michele.agostinacchio@unibas.it

ABSTRACT

The paper proposes the results of an experimental study on bituminous binders aimed to define master curves of rutting factor. The experimentation was performed in agreement with the SHRP Protocol specifications on an original bituminous binder and the corresponding modified binders obtained with the addition by weight of 3, 4 and 5% of radial SBS.

The laboratory tests were carried out with a rotational rheometer (DSR) at the temperatures of 50, 60, 70, 80, 90 and 100°C working on bituminous binders before and after long term ageing executed with the PAV device.

The Rutting Factor used as indicator able to describe the permanent deformation phenomenon (PD) of asphalt concrete for flexible road pavements is the subject of recent studies that place doubt on its effectiveness in favor of other parameters such as, for example, the ZSV (Zero Shear Viscosity). However, these studies have not yet furnished definitive and universally shared results so the Rutting Factor is always used in the practice and also in research. The master curves implementation allows to evaluate, in the medium-high range of temperatures, the response of the binder in terms of $|G^*|/\sin\delta$, highlighting the optimum range of use to contain PD.

KEY WORDS: Master curve, rutting factor, permanent deformation.