

OPTIMAL UTILIZATION OF EXISTING PAVEMENT STRUCTURE DURING REHABILITATION

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ABSTRACT

The structural value of a pavement being rehabilitated or upgraded in preparation for it to carry a foreseen increase in traffic is all too often disregarded since it is now classified as “failed” and thus deemed to be useless. This then leads to the erroneous consideration that the *in situ* material has to be discarded and an all new pavement composition has to be designed from scratch and applied in place of the existing “failed” pavement. In most cases this results in huge energy wastage, unnecessarily detrimental CO₂ footprint and additional cost. The existing pavement structure should and usually can be incorporated into the rehabilitation or upgrading design, in many cases resulting in the addition of only one or two imported layers of material, resulting in appreciable energy and cost savings. Although this approach is based on Dynamic Cone Penetrometer (DCP) soundings and the concept of pavement strength-balance, the philosophy and approach may be applied in combination with other methods of pavement condition and *in situ* strength assessment. The paper discusses this approach and the experience gained with its application in South Africa.

KEY WORDS: Pavement, Failure, DCP, Strength-Balance, Rehabilitation.