

Concrete highway pavement load capacity for possible future increases in permissible axle loads

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ABSTRACT

From time to time, there is government and industry discussion about measures to improve freight transport efficiency that include increasing permissible axle loads. If this was to happen, it may be limited only to major transport corridors. This paper does not set out a case supporting such increases. However, it would be informative from an engineering perspective to assess their effect on the load carrying capacity of the existing inventory of concrete highway pavements and those under construction, totalling approximately 850km. The principal issues relate to load carrying capacity of existing pavements and thickness requirements for future pavements. Using the current Australian national pavement design guide, related concrete highway pavement design criteria and contemporary weigh-in-motion axle load data, this paper considers the load capacities of existing pavements and the effect on future thickness requirements for a range of increases in axle loads compared with current standard loads.