

Role of Pavement Deflection on the Service Life of High Skid Surfacing

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The hypothesis that large pavement deflection is a primary cause of premature failure of calcined bauxite surfacings, primarily through cracking and delamination, is tested.

This required a database to be built and populated, which covered all calcined bauxite sections of the state highway network. Details regarding road geometry, traffic characteristics, construction, immediate previous surface, pavement characteristics and skid time history were obtained for each section of calcined bauxite surfacing. Key inputs were pavement deflection from Traffic Speed Deflectometer and Falling Weight Deflectometer surveys and the type of binder system used (i.e. epoxy-resin, acrylic resin etc).

The resulting database was analysed to identify the key factors that influence the service life of high friction, calcined bauxite, road surfaces under New Zealand conditions.