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IPENZ TRANSPORTATION GROUP

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ABSTRACT SUBMISSION FORM

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Overview of Presentation

Christchurch Airport has 820,000sqm of airside pavement surfacing, 66% of which is asphaltic surfacing which never receives any aircraft traffic loadings. This pavement deteriorates only by environmental factors and is replaced approximately every 12-15 years due to moisture penetration and oxidation of the bitumen binder, resulting in embrittlement and the creation of Foreign Object Debris (FOD) which is a serious problem for the airport operations.

GSB-88 is a cationic bitumen emulsion containing Gilsonite, a natural resinous hydrocarbon high in nitrogen particles with a resistance to free radical oxidation. It is used as a rejuvenating agent for deteriorating pavements and has recently successfully been applied to the airside pavement at the Christchurch International Airport.

At a total project cost of $2 per square metre, and with a proven track record of 5 years pavement longevity, the economic benefits for GSB-88® are clear.

However, a drawback becomes apparent when friction characteristics are investigated. Upon application, the pavement will lose approximately 0.3 grip numbers before undergoing a curing process, which allows the friction values to steadily return to status quo. With careful planning and management through the use of trials, weather predictions and friction testing, the effects of friction loss can be mitigated.

With its successful use on airside pavements, is there scope to broaden the horizons into our road network?