

safetrack[®] hw

HIGH FRICTION SURFACING



HAPAS

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Hong Kong Noise Reduction Trial

Independently Assessed by ACTIVE ENERGY MANAGEMENT

Products in action



Hong Kong is one of the worlds most congested and built up cities and as a result road noise reduction has become an issue of increasing social and environmental importance.

The methods traditionally used by the Hong Kong authorities to counteract this problem include noise barriers, which whilst effective are unsightly and intrusive, and Porous Asphalt, usually consisting of a 30mm open graded bituminous friction course, which although offering an initial high level of noise reduction has a tendency to become clogged over time, reducing its effectiveness as a noise reducing system.



Having identified these limitations with the existing systems, Stirling Lloyd proposed their Safetrack[®] HW system which in addition to providing skid resistance in an area prone to steep slopes and sharp bends, would also offer significant acoustic benefits.

Safetrack[®] HW is a liquid applied, rapid curing high friction surfacing system based on Methyl Methacrylate (MMA) resins consisting of a tough resin binder and an aggregate overscatter.

The system is well established in the UK where it has been approved as a BBA/HAPAS Type 1 High Friction Surfacing System, conforms to Clause 924 of the UK Specification for Highway Works (March 1998) for Resin Based High Skid Resistant Surface Treatments and has a proven track record of successful applications.

To demonstrate the viability of the system as both a high friction surfacing system and a noise-reducing product for the Hong Kong market, independent testing was undertaken. In order to establish the level of noise reduction achieved by the use of the system a series of tests were commissioned by Stirling Lloyd and conducted by Active Energy Management (AEM).



The tests were carried out on a low speed, smooth, worn concrete road with a speed limit of 60 km/hour, conditions which would in theory give a relatively low expected noise reduction. A vehicle was driven over both treated and untreated areas of the road during periods of low ambient noise with the noise levels being measured and recorded in decibels.

continued overleaf ➤

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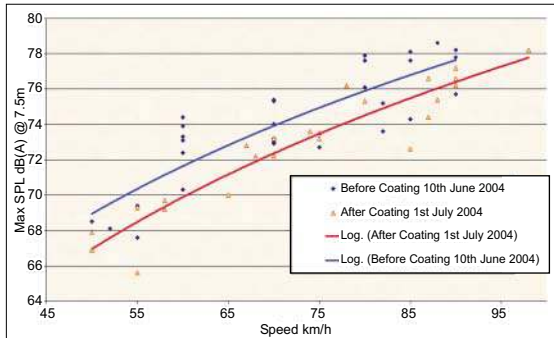
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The results, shown in the graph below, demonstrated a 50% reduction (up to 3 decibels) in the noise level generated by the areas treated with the system. Used on a standard, heavy textured concrete surface better results i.e. greater levels of noise reduction would be expected.



In addition the **Safetrack® HW** system is unlikely to display any signs of clogging in-service as it does not have a cellular structure with open pores and voids like Porous Asphalt. Consequently the hydraulic action of car tyres flushes through the space between the aggregates thus creating a self-cleaning mechanism. To further verify the credentials of the **Safetrack® HW** as a skid resistant/noise reducing system Stirling Lloyd and the Hong Kong Highways Research & Development Department embarked on trials - testing **Safetrack® HW** alongside currently approved skid resistant systems in order to assess the longevity and durability of each system under identical traffic and climatic conditions.



After just six months of service on a busy road between Tai Po and Sha Tin in the Northern Territories of Hong Kong, which is subject to high levels of HGV traffic, the results are extremely encouraging, with competitive thermoplastic systems already displaying signs of wear, whilst **Safetrack® HW** exhibits none.

This is supported by Scuffing Tests carried out as part of the HAPAS approval process. **Safetrack® HW** had a zero erosion index, meaning there was no measurable aggregate loss in the aggressive test (HAPAS Type 1 approval allows an erosion index of up to 3, though this means up to 25% of the aggregate can be lost!). **Safetrack® HW's** result indicates a greater life expectancy in service.



These two series of tests combined with **Safetrack® HW's** in-situ performance has resulted in the system attracting a great deal of interest from clients and contractors alike across the Asia Pacific region. ■

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