Research & Technology

We continue focusing our researches on environmentally friendly technologies, such as using recycling glass cullet in concrete pavers, and developing a low noise road surfacing material for local roads.

Eco-Paver

We have been striving for developing environmentally friendly paving material for footpath. From 2004, we have mandated the use of recycled aggregates in concrete pavers (eco-paver), in which recycled aggregates are crushed concrete or crushed rocks generated from construction or demolition works. From 2010, we have taken further initiative to use recycled glass cullet in concrete pavers and mandated the use of glass cullet from 20% to 25% by weight of the total aggregates.

As per the latest collaboration study between Environmental Protection Department (EPD) and the Hong Kong Polytechnic University-"Enhancing the Application of Local Recycled Glass Cullet in Production of Concrete Paving Blocks", it is noted that by controlling the size of recycled glass cullet to control the undesirable effect of alkali-silica reaction, the glass cullet content can be raised to 35% by weight of total aggregates. We are now arranging site trials to verify the real-life performance of eco-pavers with recycled glass cullet of 30% to 35% by weight of the total aggregates. With the success in the site trials, the use of eco-paver with higher glass cullet will then be specified in road maintenance contracts to promote environmental friendliness.

Waste glass bottles

Crushing

Sieving

Eco-paver

Low Noise Road Surfacing Material

With reference to overseas experience, we have been developing a low noise road surfacing material, namely 6mm Polymer Modified Stone Mastic Asphalt (PMSMA6), for local roads in Hong Kong. The material is made of fine-grained gap-graded bituminous mixtures. Its smooth and optimized surface texture provides a noise reducing property to alleviate traffic noise impact and promote sustainable resource management, thereby contributing to a livable city.

With positive findings in laboratory testing and from computer simulation, we in collaboration with EPD have been proactively conducting site trials to ascertain the long term durability of PMSMA6 under live traffic in local road conditions with a view to establishing a set of criteria for general application of this low noise road surfacing material.

PMSMA6 laid at Harcourt Road

PMSMA6 laid at Tung Chung Waterfront Road