

Efficient reuse of railway track waste materials

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Abstract-

Some of the most important materials that need recycling are generated by the construction industry. This waste has a multitude of disposal problems. In the specific case of railways, the treatment of materials taken from track maintenance and renewal operations is even more challenging. Every year, tons of track materials are replaced on rail tracks all over the world. These kilometres of rails, sleepers, and tons of ballast can be reused for other purposes. However, sometimes the environmental cost generated by their secondary use is worse than the problems involved in their disposal. This work describes a revised methodology to improve the recycling process of these waste track materials and considers the carbon footprint generated during the process along with important advantages and benefits for the economy and the environment. The reuse of these worn track materials is important to extend their life cycle and reduce environmental and economic costs in the long term. This research aims to analyse dismantled track material and evaluate possible second uses, taking into account the carbon footprint generated. Special attention has been placed on environmentally friendly uses such as fencing protected areas or green routes, among others.

Index Terms- life cycle cost; environmental cost; waste track material; recycling; second use; carbon footprint

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