Pro Value of state of the art Bridge Bearings and Expansion Joint Solutions

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Abstract

The MEGA cities in South East Asia are more and more faced with the limited capacity of their infrastructure. Above all massive investment is spent on the public transport system, which expands at an enormous speed.

Caused by limited space and economic reasons, more and more roads and railway lines are built elevated. Approx. the same huge funds are necessary to improve existing structures to the needs of the next centuries.

The choice of bearings and expansion joints may jeopardize the economy during operation. The right choice on behalf of sustainability results in a pro-value for the road or railroad operator in the name of reliability, durability and maintenance costs of the device and the entire project.

Especially for railroad projects, the focus on the interaction between the bridge bearings and the track is essential not only for the device, but for the entire track reliability.

To get the pro-value for the structure, the European standard, EN1337 and EN1090, classify performance in dependence to the structure. This classification is decisive for the sustainability of structures, regardless if for new projects or rehabilitations.

The presentation would highlight the innovations of modern bridge bearings and expansion joints on reliability and cost-effectiveness during operation. Latest technology guarantees a low carbon footprint.

Keywords: structural bearings; expansion joints; working life; EN 1337; European Technical Assessment; European Technical Approval; ETAG European Assessment Document

1 Introduction

Global urbanisation is one of the world challenges. The global MEGA cities need to expand or to establish their infrastructure capacity. With the focus on the urgency, the investment in new projects should include considerations for future economic aspects to avoid financial disaster during the design working life of the project.

In 2014, the financial loss of the city of Sao Paulo, caused by the daily jams, was 31 milliard dollars, comparable to 7.8% of the economic output of Sao Paulo.

Besides the investment costs, the budget and specification should avail the life cycle and reduced maintenance costs, as well as the carbon food print of the projects over the design life. To simplify the sustainability is the key to handling the rapid urbanisation.

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