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Custom Engineered Elastomer Decreases Noise Levels and Provides Vibration Isolation

Enidine Elastomeric Isolator Application

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Product Overview

A world-leading manufacturer of innovative transportation solutions, headquartered in Canada, was responsible for the turnkey design and construction of the fully automated, 4 mile (6.4 kilometer) monorail system located in Las Vegas, NV. It is the first monorail system of its type, servicing the entire east side of the Las Vegas strip. Prior to its induction, qualification testing during a high speed braking phase indicated that noise levels both inside and between the cars were too high. Unfortunately, limited space restrictions would not allow for a standard isolation device to be incorporated and the program was facing severe financial penalties if not completed on time.

Product Solution

Given the specific longitudinal and lateral loads as well as the rail car vibration spectrum, ITT Enidine Inc. was able to provide a custom engineered elastomeric solution that would effectively attenuate noise and vibration levels plus handle the dynamic loads applied from the propulsion system. At less than 0.35 in. (9 mm) complete thickness, ITT Enidine Inc. was able to design a custom vibration isolation system that reduced the overall noise levels by 6 dBA and eliminated the need for an expensive redesign of other rail car components.

Application Opportunity

With qualification testing complete, the installation of the new isolation system proceeded on schedule and was officially launched in early July 2004. Additionally, a new downtown extension is expected to proceed in 2005, including 20 additional monorail vehicles that will service four new stations along 2.25 miles (3.6 kilometers) of guideway. ITT Enidine Inc.'s dedication and responsiveness to the customer's concerns facilitated reducing product delivery time by over 10 weeks, despite a very tight design criteria and aggressive performance goals. Such applications highlight ITT Enidine Inc.'s ability to provide successful custom engineered solutions while focusing on attention to detail and customer satisfaction.

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