

Noise Report

KELTRACK® Trackside Freight

Portec Protector IV™ Trial
Australian Freight System

EXECUTIVE SUMMARY

Kelsan Technologies conducted an inspection of the Portec Rail Products, Inc. Protector-IV™ wayside applicator installed at Morningside Station at Queensland Rail. The purpose of the unit is to decrease wheel/rail interface sound generation, thereby reducing the ambient sound levels in the nearby residential neighborhoods. The objectives of this inspection included conducting sound readings, installing improved wiping bar flaps and optimizing the setup of the equipment.

The configuration of the wiping bars was reset to have three bars on the narrow gauge rails and two on the standard gauge rail. The height of all the bars was raised to an even level with the top of rail. This greatly reduces the occurrence of product overflow over the top of the bars.

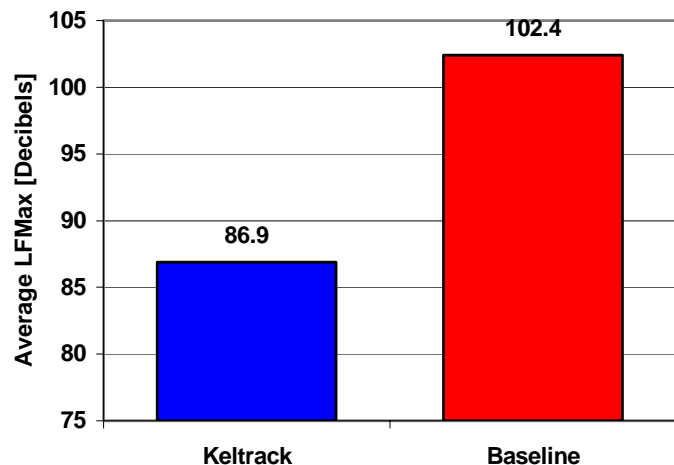
An alternative flap material that is more resistant to adhesion to the railhead was installed on all bars. Laboratory testing at Kelsan showed this material to be superior to the existing foam rubber at high temperatures. Queensland Rail personnel will monitor the long-term effectiveness of the material.

Summary Results: Sound Level Testing

The Sound reduction capabilities of Kelsan Keltrack was recorded on regular revenue service trains on the curve at Morningside Station. Kelsan Keltrack readings after it was applied to the top-of-rail the low rail and both rails, were compared to baseline readings with dry rail.

Average Peak Noise: *The Kelsan Keltrack application resulted in an average 15.5-decibel decrease in average rail/wheel sound generation for the revenue service trains relative to the baseline mainline trains on the 1:80 downgrade 200-meter radius curve.*

Average Peak Noise Level



High Frequency Noise The Kelsan Keltrack application resulted in a 6.5-30.0 dB reduction at the frequencies between 1600Hz and 8000Hz. These frequency ranges are associated with wheel squeal and flange contact.

Conclusion

The solution of Kelsan Keltrack is effective in reducing wheel/rail-generated noise on the narrow gauge track, particularly in the higher frequency ranges, and thereby decreases QR's concern of high ambient sound levels in residential neighborhoods. The application to the standard gauge will not be effective in the present situation. The equipment is not designed to apply to two gauges and will continue to become clogged by activations for every narrow gauge trains. This document outlines some of the options available for the optimization of the application at Morningside.

Note: To obtain a copy of the full report or find out the identity of the Australian Freight System, please contact John Milobar, Vice President Sales & Marketing at 604-984-6100 or jmilobar@kelsan.com.