



FLOORING SYSTEMS

## Forbo supplies luxurious floor coverings for KiwiRail's premium tourist trains

*KiwiRail, New Zealand's largest rail transport operator, is adding sixteen new 'panorama' carriages to its fleet of premium tourist trains to enhance the passenger experience of holidaymakers from across the world as they travel through some of the country's most spectacular and awe-inspiring scenery. Forbo Flooring Systems has worked with Barnacle Design, Auckland based design consultants, to supply contemporary textile-based floor coverings for the new carriages. The specification of Tessera Alignment, a textured cut and loop pile carpet contributes toward the attractive styling and superior comfort of the saloon interiors, whilst meeting the operator's critical needs for compliant and exceptionally durable flooring.*



The new panorama carriages have been manufactured for trains running on KiwiRail's Coastal Pacific, Northern Explorer and TranzAlpine routes, which take passengers through New Zealand's snow covered mountains and volcanoes, coastal landscapes, forest clad hills and deep ravines. Carpeted, centrally heated and air-conditioned, featuring panoramic side and roof windows, the carriages are designed to enable the passenger to fully capture the dramatic coastal and mountain views in total comfort and luxury.

“For tourism focused rail travel, the look and feel of the carriage interior is a very important factor in creating an environment for passengers to experience the scenery outside and a convivial atmosphere within,” said Keith Strode-Penny, Barnacle Design. “We needed a contemporary yet upmarket flooring solution that would work within our overall design scheme.”

The past performance of Forbo’s unique Flotex electrostatically flocked floor coverings - used successfully by KiwiRail for many years – was cited as a key reason for choosing to work with Forbo on this project. Flotex Montana, a versatile subdued semi-plain all-over flocked design has been installed in approximately 150 commuter rail carriages over the last decade and as Keith Strode-Penny reports: “It has worn really well and still looks good, ten years on.”

For the new panorama carriages, Barnacle Design and KiwiRail opted for Tessera Alignment, a more luxurious tufted soft floor covering drawn from Forbo’s extensive range of sheet carpet options. This textured multi-height loop pile carpet works particularly well in enclosed spaces with its bold directional theme, tempered by intersecting random blocks of rich cut pile. Cyclone, a deep blue/charcoal colourway was selected from the standard range, to work within an interior palette of natural blues, creams, greys and browns, drawn together to echo the colours of New Zealand’s high country regions. The linear style of Alignment and the Cyclone colourway chosen were deemed to have the timeless quality required for rolling stock which is expected to stay in service for at least ten years before undergoing interior refit.

Whilst appearances were obviously important, performance in use was a critical consideration in the specification process. The soft flooring had to be extremely hard wearing, capable of withstanding the wear and tear and soiling associated with heavy foot traffic, and the rigorous cleaning regimes required to maximise its lifespan and appearance retention.

Because the new tourist trains feature open-deck observation carriages, exposed to the elements, and stop at several places en-route for passengers to disembark to experience the scenery, general rail dust is the prevalent type of soiling tracked through carriages. Coal dust is an additional issue on the TranzAlpine route across the Southern Alps. This rail corridor is used by coal trains and the black dust which accumulates beside the railway line (and inside the nineteen tunnels along the route) gets blown onto the floor of the observation carriage and is then tracked through carpeted areas in adjoining carriages.

As Keith Strode-Penny pointed out: “A critical part of the transition between manufacture, commissioning and entry into service was the setting up of an on-going maintenance regime. Forbo provided great customer support in ensuring that the correct cleaning procedures were put in place.”

“Part of the solution involved Forbo working through their local agent and the KiwiRail maintenance provider to identify compatible, low cost and readily available cleaning products. Then, in addition to supplying specification sheets and documents, they explained the whole cleaning regime in simple language. This meant that everyone from the cleaners to the commissioning programme manager, to the person specifying the flooring product in the first place, understood exactly what was required to keep the product clean.”

The carpets installed in carriages operating out of the Christchurch depot were unexpectedly subjected to excessive levels of punishment at the time of the Canterbury earthquakes. The compromised physical environment effectively simulated years of wear and tear. However, as Keith reported: “Fortunately, the Forbo global customer support systems gave us great technical advice and despite those very challenging times, the carpet came out looking superb.”

Whilst natural disasters such as earthquakes cannot be planned for, fire safety is always a critical consideration in all passenger transport environments. A high level of fire retardancy was a particularly important requirement for all interior fittings and furnishings in KiwiRail’s new carriages, due to the difficult terrain and the number of tunnels along the routes. One regularly used tunnel stretches for 8.5km and features a continuous 1:33 gradient. Forbo Alignment 203 meets a range of demanding rail fire safety standards including BS 6853 Cat. 1a.

KiwiRail also had to be satisfied that any floor coverings fitted in the new carriages complied with New Zealand’s disability access guidelines, which requires that for wheelchair accessibility the walking surface should have a co-efficient of friction in all conditions of at least  $0.4 + 0.0125 S$  (where S is the slope of the surface as a percentage). Forbo Alignment’s densely tufted pile ensured this standard was easily met.

Forbo’s Tessera Alignment carpet product has now gone into service on two of KiwiRail’s tourism services and the interior design scheme and overall ambience of the new trains are receiving excellent feedback. The floor covering has been deemed an ideal solution for this type of rolling stock and Keith Strode-Penny says his consultancy will continue to recommend Forbo as a supplier, and specify Alignment in future:

“Once again we have had a positive experience of working with Forbo and its commercial floor coverings. When specifying global rail products for very small scale New Zealand production runs, it can be a real challenge to try to interest multi-national suppliers to go after the business. The production runs tend to be relatively short yet suppliers still need to go through rigorous selection and tender processes. This means they often need to invest as much time and effort as they might normally invest in much larger projects closer to home. Forbo have always been a really enthusiastic and responsive supplier from initial enquiry through to ongoing product support and they provide excellent service.”

“With regard to Tessera Alignment, we will certainly specify this carpet again as it has a high quality look and feel. We know Forbo offers a bespoke design and manufacturing service but we did not need to go down this route because of the wide range of attractive colours available off-the-shelf. Alignment has the all-important fire ratings we need for passenger transport applications and complies with disability access requirements.

“Where budgets are concerned we have compared Forbo’s product to standard Heavy Duty Contract Grade 100% wool carpet and whilst it is undoubtedly more expensive, it will last between 2 and 3 times as long in rail service, so it offers great value for money when assessed on an all-of-life cost basis.”

KiwiRail’s remaining panorama carriages are due to be completed by the end of 2012 and will soon be introduced onto the premier TranzAlpine route. In the meantime, a brand new service named the “Northern Explorer” has begun operating through the volcanic regions of the central North Island featuring the UNESCO

listed World Heritage Tongariro National Park. The new panorama carriages with their attractive and luxurious interiors have not only enhanced the passenger experience for KiwiRail's customers but have now given the operator a platform to develop New Zealand rail tourism in new directions.

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