

Innovative Acoustics

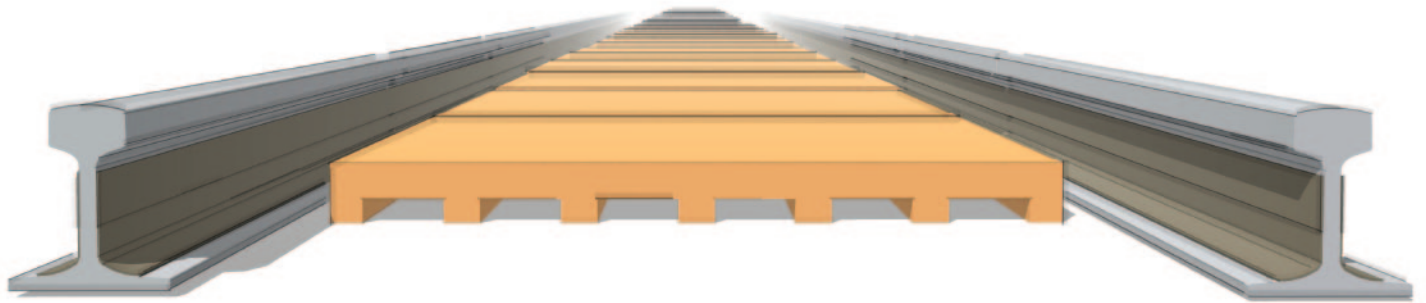


Project:

Epping to Chatswood Rail Tunnel, Perth, Australia



A bespoke solution for a demanding application



Bespoke panels to combat rolling noise

Client: Transport Infrastructure Development Corporation (TIDC)
Material supplied: 18,990m² running along 25 kilometers of track

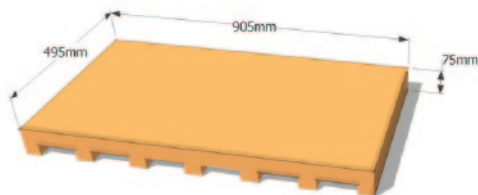
To reduce rolling noise generated by the contact of train wheels and the track, the engineers deemed that a porous absorber placed between the tracks would provide higher performance than lining the walls of the tunnel. The challenge was to find a long lasting, non combustible material with enough durability to withstand high impact from track workers, cleanability, and high sound absorption. The only product which answers all these requirements is Quietstone.

We designed bespoke panels with feet running along the bottom. The benefits being that acoustic performance is increased by adding an air gap, and workers have a higher platform to work across. The client gave us the order after we surpassed their target acoustic performance.

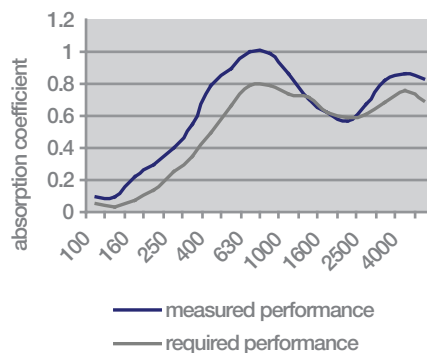
Installation

This project required urgent attention in a very tight timeframe. We produced all the panels in three months. The panels were designed to require minimum installation by simply laying the panels between the tracks with a small amount of cementitious adhesive. The weight of the tile alone stops it from being pulled up by the pressure changes generated by the trains and the adhesive stops them moving laterally.

Dimensions: 905 x 495 x 75mm
Weight: 80Kg



A simple aluminium frame is fixed to the wall.



Sound absorption data provided by the University of Salford. Tested to BS EN 354:2003
Note - Having since undertaken more development work, we would now expect higher performance.

Advantages

- High sound absorption
- Non combustible
- Weather resistant
- Self bearing
- Easily cut on site
- Bespoke sizes available



Smaller panels installed at the sides to hide fixings. Plugs of the same material hide the screw holes.