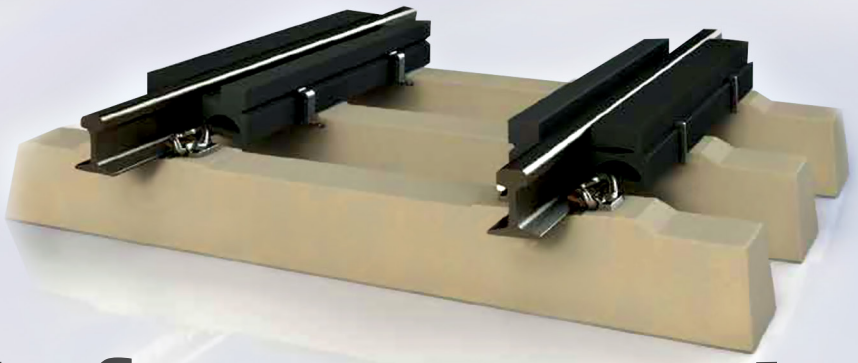


Inserts for permanent way asphalt crossings and yards

RX Rubber Level Crossing Inserts

Trelleborg RX Rubber Level Crossing Inserts profiles have evolved from experience in manufacturing permanent way solutions since 1991.

Rail wear reduced in crossing areas

It is widely recognised within the track maintenance industry and by asset owners that there will be more rail replacement issues, excessive rail wear and permanent way deterioration in installations where the asphalt and road base construction contacts the rail.

Asphalt and road base being adjacent and against the rail provides a constant supply of fluid and abrasive material that is turned into a grinding paste with wear exasperated by the constant rail movement generated by train, vehicle and thermal sources.

In recognition of this issue, Trelleborg RX Rubber Level Crossing Inserts ensure that material like asphalt and coarse gravel are kept away from the flange way as far as is practical and provides good drainage.

Interface

Trelleborg RX Rubber Level Crossing Inserts primary function is to act as a movement and isolation interface between the steel rail and the roadway construction materials and adjacent pavement and walkways.

These are commonly constructed from hot pour asphalt, gravel, road base or concrete.

Trelleborg RX Rubber Level Crossing Inserts are suitable for road speeds below 80 Km/hr.

Thermal

Rail expands and contracts at a differential rate as compared to typical road construction materials. The natural rubber used by Trelleborg offers accommodation and protection from thermal movement.

The interface design accommodates normal rail deflection, and cross traffic movements with minimal forces transmitted to the adjacent asphalt.

Damping

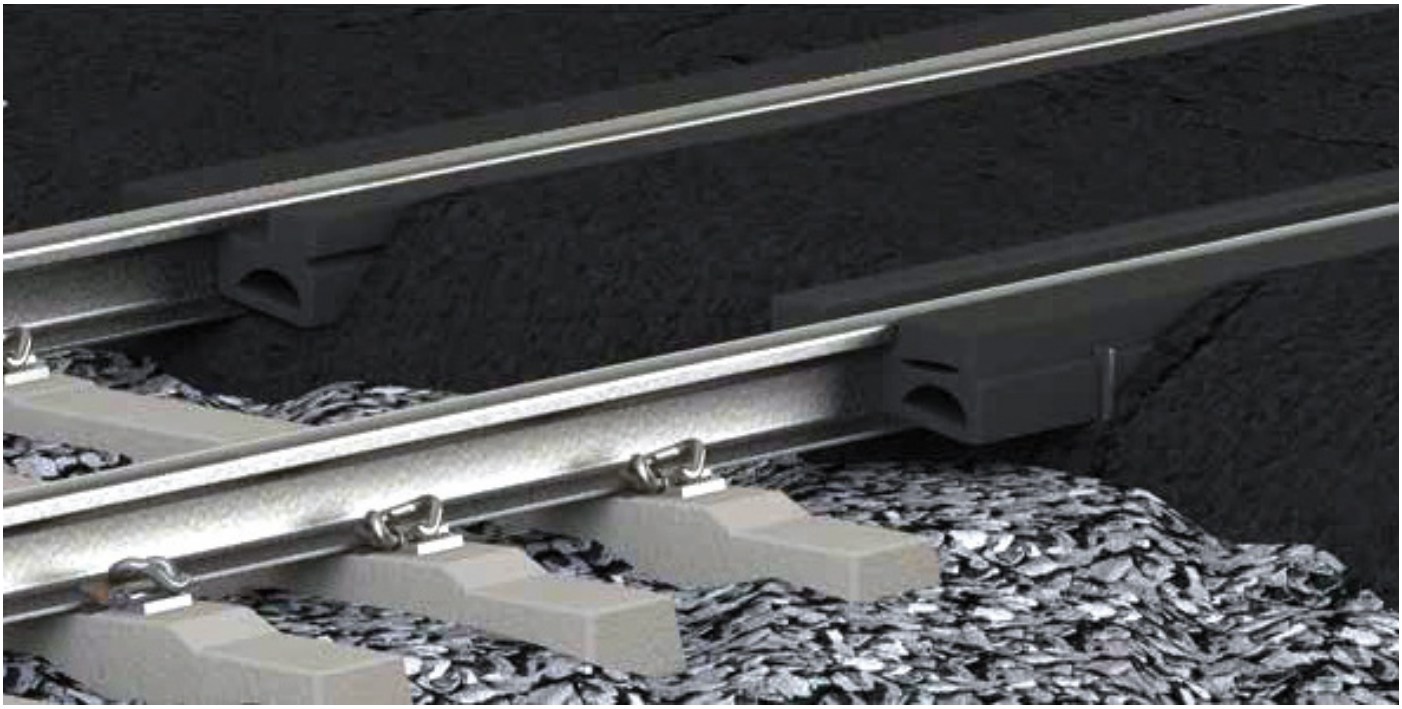
Mitigation of rail vibration and movement on ballasted track requires a system to allow many millions of vertical movements to occur, yet provide damping and accommodation of the rail generated movement that could be imposed on the adjacent road construction materials.

Using the same profile used in our full sized rubber panels Trelleborg has proven effective in the role of damping and the accommodation of rail movement in the hot and harsh Australian environments. Trelleborg RX Rubber Level Crossing Inserts are rated to handle all vehicle axel loads including buses to the heaviest road train truck configurations.

Motor vehicle and tyre traffic

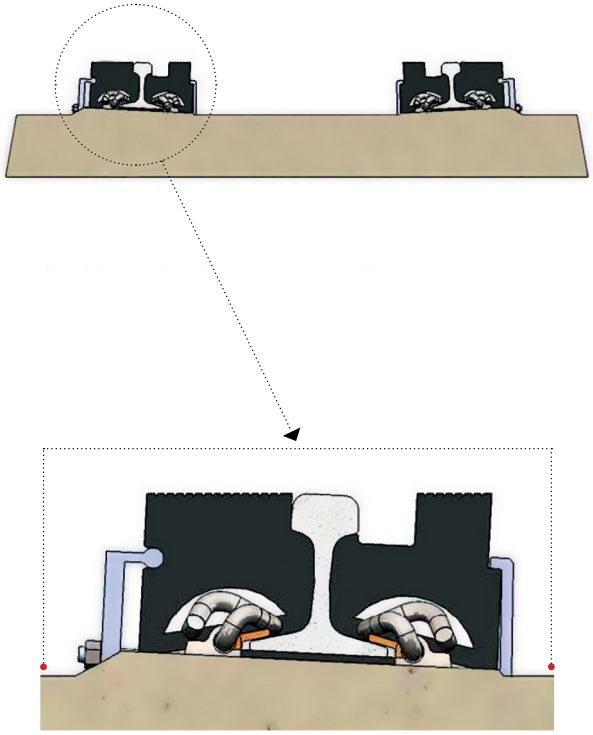
The steel rail and rubber interface does not affect transit traffic as Trelleborg RX Rubber Level Crossing Inserts profile allows a flexible but firm interface for road vehicles including trucks and heavy equipment.

The profile also offers complete protection of the rail clip.



Design

- The natural rubber compound is selected from Trelleborg's proven compounds in order to accommodate rail expansion and movement and to effectively support and accommodate tyre and rail traffic within this dynamic environment.
- The design and hardness of the rubber compound Trelleborg selects ensures flexibility but maintains a firm and robust interface with the rail profile. This may be customized to a wide set of profiles.
- The tight profile against the rail ensures particles and water migration is minimised to the substructure but still allowing drainage to occure through the ballast.
- Trelleborgs experience with heavy duty panel crossings shows that the deep flange gap provides protection to the rail gauge side of the track and with no adverse effects to vehicular traffic moving over the permanent way. It also provides an effective drainage channel in wet conditions.
- Rated at 80km/hr on asphalt and concrete road.
- Universal clip protection - the arched cut out is designed for a universal application of all major clip types used from 41 - 60 kg rail.
- A quick release nut & bolt ensures a 100% safe lock that does not unclip and a secure interface against the rail prior to gravel road base fill or an asphalt fill to top of rail height.
- The rubber interface which is used provides a level surface for vehicular traffic at crossings with surface ribbing width accepted globally to ensure maximum traction for rubber tired vehicular traffic under dry and wet conditions.



Simple install procedure

Step 1

Position RX section in installation location

Step 2

Position and loosely tighten retention brackets

Step 3

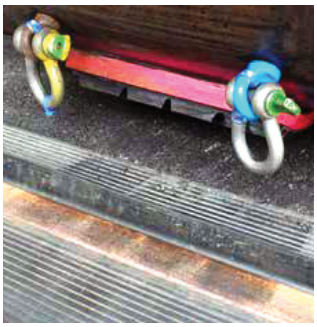
Fully tighten all retention brackets once all are installed

Material Specification for Trelleborg RX Rubber Level Crossing Inserts

PROPERTY	TESTING STANDARD	CONDITION	RESULT
Tensile Strength	ASTM D412 Die C ASTM D573 Die C	Original Aged for 96 hours	23MPa (Min) 18 MPa (Min)
Elongation at	ASTM D412 Die C ASTM D573 Die C	Original Aged for 96 hours	470% (Min) 400% (Min)
Hardness	ASTM D2240	Original	72 Shore A
Compression Set	ASTM D394	22 hrs at 70 deg C	25%
Resistance to	ASTM D1149	1 p.p.m. at 20% strain @ 40 Deg C for 100 hrs	No cracking visible by eye
Abrasion	BS 903 A9	Method B, 1000 revolutions	0.3
Tear Strength	ASTM D624	Original	110kN/m

Testing

Truck lockup test



Static load test at 3.5 Tons

After 10 passes at 3.50 Ton Dynamic test

Contact us

Trelleborg Applied Technologies delivers innovative and reliable solutions, materials and smart systems that maximizes performance for our customers. Our dedicated and highly skilled staff are always on hand to provide seamless process support from initial idea, through to delivery and beyond.

Australia: +61 3866 7444
Singapore: +65 6265 0955

Email: appliedtechnologies@trelleborg.com