

RX - Insert Type Rubber Crossing

FOR PERMANENT WAY ASPHALT CROSSINGS & YARDS





Welcome to our world.

With over 100 years of polymer knowledge and application experience Trelleborg is a market leader in developing specialty rubber compounds for use in the most arduous applications.

Australia's premier rubber crossing.

The RX-E and RX-M 50kg and 60kg Rail Insert profiles have evolved from Trelleborg experience in manufacturing permanent way solutions since 1991.

The first Trelleborg Rubber Panel (FB) Permanent Way System was supplied for a coal freight line near Sarina, North Qld.

The Trelleborg Permanent Way Panel System is now accredited by the ARTC and QR Rail, and is

generally accepted as being Australia's premier high quality heavy duty, high speed rubber crossing.

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 offers the same proven width and depth interface compared to similar systems.

This ensures that material like asphalt and coarse gravel are kept away from the flange way as far as is practical and provides good drainage. Refer to the cross sectional sketch in Appendix A.



Interface

The RX insert's 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.

* The RX -E is not high speed rated at this time, but will be suitable for road speeds below 80 Km/hr. Accreditation for 110km/hr rating is pending.

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 Permanent Way System has proved effective in the role of damping and the accommodation of rail movement in the hot and harsh Australian environments. RX is rated to handle all vehicle axel loads including buses to the heaviest road train truck configurations.



Thermal

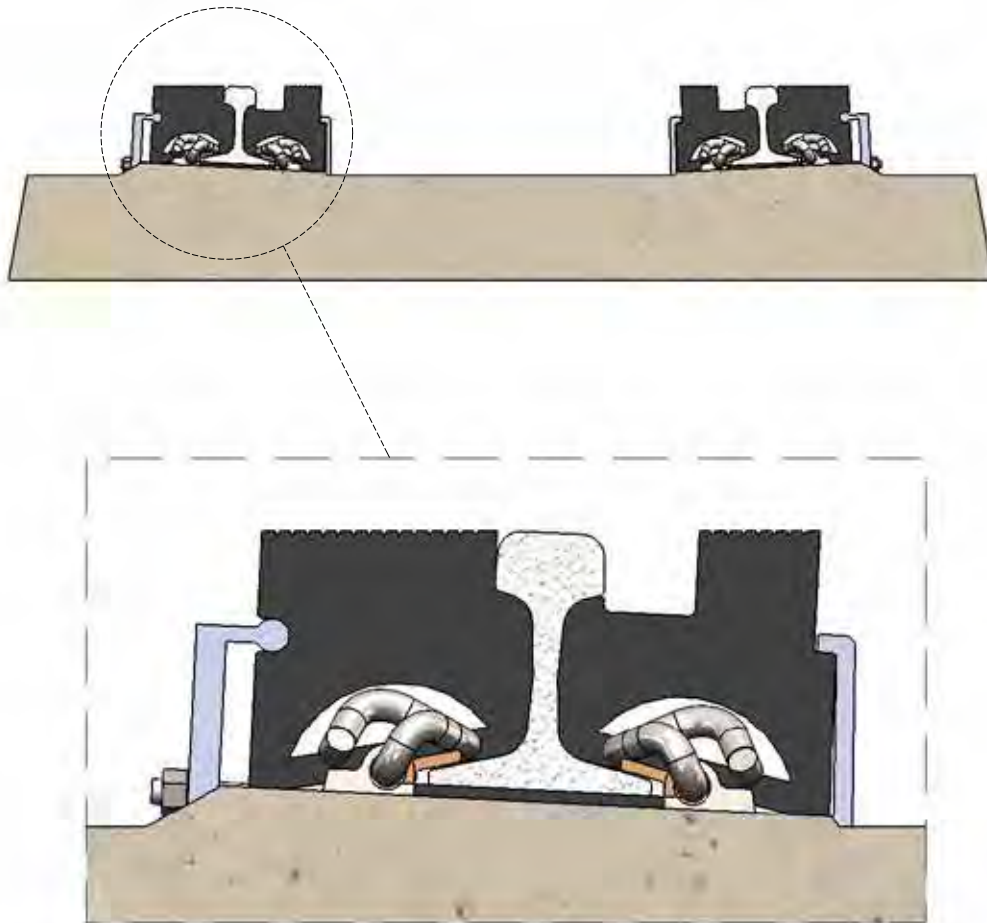
Rail expands and contracts at a differential rate as compared to typical road construction materials. The natural rubber used by Trelleborg offers accommodation and protection from thermal movement.

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

Motor Vehicle and Tyre Traffic

The steel rail and rubber interface does not affect transit traffic as the RX insert 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

1. The natural rubber compound is selected from our proven compounds in order to accommodate rail expansion and movement and to effectively support and accommodate tyre and rail traffic within this dynamic environment.
2. 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.
3. The tight profile against the rail ensures particles and water migration is minimised to the substructure but still allowing drainage to occur through the ballast.
4. Our experience with the FB 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.
5. Rated at 80km/hr on asphalt and concrete road.
6. Universal clip protection - our arched cut out is design 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 we use 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.

Material Specification 2714S for Trelleborg Rail Crossings

PROPERTY	TESTING STANDARD	CONDITION	RESULT
Tensile Strength	ASTM D412 Die C	Original	23MPa (Min)
	ASTM D573 Die C	Aged for 96 hours	18 MPa (Min)
Elongation at	ASTM D412 Die C	Original	470% (Min)
	ASTM D573 Die C	Aged for 96 hours	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 3.5 Ton Dynamic test

Field RX – 60 Insert Combined with Standard Heavy Duty Gauge Panels



Used in areas where quick lift and replacement of the crossing is required for regular maintenance.

Simple Install Procedure



1



2



3

Accreditations

ISO 9001, 14002 are attached OHS Other certification documentation available on request





Trelleborg Engineered Products is part of the Trelleborg Offshore & Construction business area of the Trelleborg Group. Trelleborg Engineered Products is a leading global developer, manufacturer and provider of engineered polymer solutions to the energy, infrastructure and mining industries. Performing in some of the harshest environments on earth, its principal products are sealing systems for tunnels, a wide range of bearings, polymer solutions for floatover technology and wear resistant products for the mining industry. With local support, a track record of over 100 years and its everyday ingenuity, customers can rely on Trelleborg Engineered Products to deliver innovative polymer solutions that significantly improve the quality, safety and efficiency of its customers' operations worldwide.

WWW.TRELLEBORG.COM/ENGINEEREDPRODUCTS



facebook.com/Trelleborggroup
twitter.com/TrelleborgGroup
youtube.com/trelleborg
flickr.com/trelleborg
linkedin.com/company/trelleborg

