ON TRACK
WITH
DELKOR RAIL
Quality Track Products & Infrastructure Solutions
Resilient Bonded Baseplates

www.delkorrail.com
ABOUT DELKOR RAIL

Delkor Rail is a world leading supplier of high quality resilient bonded rail baseplates with over 30 years’ experience providing technical advice and quality track related products to the world’s Rail Industry. Delkor Rail’s bonded baseplates have been utilised in numerous worldwide track and turnout projects as well as retrofit applications to suit a wide variety of railway operating conditions.

Since 2011 Delkor Rail has been a fully owned subsidiary of Zhuzhou Times New Material Technology Co. Ltd. (TMT), with access to state-of-the-art product and material development, manufacturing and testing facilities.

Our experienced technical staff can tailor innovative solutions to meet the stringent requirements and operating conditions of today’s modern railways in Light, Metro, General Main Line and Freight Line applications.

Delkor Rail is certified to ISO 9001 Quality Standards.
A durable and highly resilient rail fastener for high vibration and noise attenuation.

Simple, reliable and maintenance free, the Delkor Egg baseplate has been derived and developed from the original Cologne Egg design hatched in the 1970s.

The Delkor Egg baseplate helps to reduce structure-borne vibration and noise and is made up of a SG iron top plate and base frame that are vulcanised (bonded) together by means of a natural rubber element, which helps achieve a very low static stiffness while still ensuring a high degree of rail stability.

The Egg rail fastener ensures optimum vibration and structure-borne noise reduction by providing six degrees of rail movement provided by the rubber element which supports the top plate holding the rail. Due to the very low dynamic to static stiffness ratio that the Egg provides it achieves a high degree of vibration and secondary noise attenuation.

As the fixation components (screws, spikes / threaded rods) only pass through the baseframe which is isolated from the top plate by the rubber element, these fixation components are not subject to any loadings which can cause fatigue failures and maintenance issues over a period of time.

Delkor’s range of Egg baseplates are available in a variety of standard sizes and these designs can be customised and adapted to suit your specific fastening system and operational requirements.
**Specifications**

**RF127**

- **Axle load (T)**: ≤ 18
- **Applied rail**: 54E, 54E (BA113A), 60E, BS80, AS60, RE115
- **Applied clip**: 'e' Type, Skl Type, JR Type (others on request)
- **Design height (mm)**: 70
- **Hole fixings**: 2, 4
- **Rail cant**: Zero, 1:20, 1:40
- **Optional accessories**: Serrated washer
- **Static stiffness under vertical load (kN/mm)**: 6 – 15
- **Dynamic to static stiffness ratio**: < 1.4
- **Electrical resistance**: > 1 Mohm
- **Product application**: Cologne, Vancouver, Ottawa, Madrid, Singapore, United Kingdom, Shanghai, Shenzhen

**RF152**

- **Axle load (T)**: ≤ 25
- **Applied rail**: 54E, 54E (BA113A), 60E, BS80, AS60, RE115
- **Applied clip**: 'e' Type, Skl Type, (others on request)
- **Design height (mm)**: 73 – 80
- **Hole fixings**: 2, 4
- **Rail cant**: Zero, 1:20, 1:40
- **Optional accessories**: Serrated Washers for lateral adjustment
- **Static stiffness under vertical load (kN/mm)**: 7 – 20
- **Dynamic to static stiffness ratio**: < 1.4
- **Electrical resistance**: > 1 Mohm
- **Product application**: Sydney Rail Network, Sydney Harbour Bridge, Auckland New Zealand Metro, Hong Kong MTRC
RF167

Specifications

- Axle load (T): ≤ 18
- Applied rail: 54E, 56E (BA113A), 60E, BS80, AS60, RE115
- Applied clip: ‘e’ Type, Skl Type (others on request)
- Design height (mm): 50
- Hole fixings: 2, 4
- Rail cant: Zero, 1:40, 1:20
- Optional accessories: Serrated washers for lateral adjustment
- Static stiffness under vertical load (kN/mm): 6 – 14
- Dynamic to static stiffness ratio: < 1.4
- Electrical resistance: > 1MOhm
- Product application: London Underground Tube, Singapore, Sydney Metro North West, Spain

RF168

Specifications

- Axle load (T): ≤ 18
- Applied rail: 54E, 56E (BA113A), 60E, BS80, AS60, RE115
- Applied clip: ‘e’ Type, Skl Type (others on request)
- Design height (mm): 76
- Hole fixings: 2, 4
- Rail cant: Zero, 1:40, 1:20
- Optional accessories: Serrated Washer
- Static stiffness under vertical load (kN/mm): 8 – 14
- Dynamic to static stiffness ratio: < 1.4
- Electrical resistance: > 1MOhm
- Product application: Beijing Metro, Shanghai
A reliable and highly robust rail fastener for maintenance-free operation.

A simple but highly robust rail fastener, the Delkor Alt.1 baseplate was first developed in Germany in the late 1970s and was derived from the early 'sandwich' (non bonded) design baseplates to improve performance reduce maintenance and provide in track durability.

The Delkor Alt.1 baseplate is made up of a SGI top plate and outer base frame that are vulcanised (bonded) together by means of a natural rubber element. The underside of this rubber element is specially profiled and designed to allow movement of the top plate which holds the rail while ensuring a high degree of rail stability. Its most suitable for non ballasted trackforms where vibration and ground borne noise reduction is required.

A key feature of the Alt.1 baseplate is the outer frame encompasses the top plate, making the unit totally fail safe. The bonded rubber element provides resilience in all six degrees of movement which results in lower vibration and structure borne noise. This feature also dramatically reduces the dynamic stress on the anchoring elements as these elements (screws/kings / threaded rods) only pass through the outer base frame which is totally isolated from the top plate by the rubber element and virtually eliminates in track fatigue failures and maintenance issues over a long period of time.

The profiled rubber element on the bottom side of the Delkor Alt.1 is only exposed to compression loads with its spring characteristic becoming more progressive as the load increases. This avoids excessive deflections in the event of overloading the fastener. This makes the baseplate ideal for operations where mixed traffic conditions are required.

Another feature of the Alt.1 is that the rubber element is not subjected to any preload (unlike ‘sandwich’ type design baseplates) which ensures resistance to aging and provides excellent dynamic performance and long maintenance-free service life across a wide variety of applications from light rail to heavy haul freight operations.

Delkor’s range of Alt.1 baseplates are available in a variety of standard sizes and these designs can be customised and tailored to suit your specific fastening system and operational requirements.
### Specifications

**RF191**

- **Axle load (T)**: ≤ 17
- **Applied rail**: 54E, 56E (BA113A), 60E, BS80, AS60, RE115,
- **Applied clip**: ‘e’ Type, Skl Type, (others on request)
- **Design height (mm)**: 30
- **Hole fixings**: 2 (4 if required)
- **Rail cant**: Zero, 1:40, 1:20
- **Static stiffness under vertical load (kN/mm)**: 18-35
- **Dynamic to static stiffness ratio**: < 1.4
- **Electrical resistance**: >1 MOhm
- **Optional accessories**: Serrated washers for lateral adjustment
- **Product application**: Canada, Japan, Spain

**RF192**

- **Axle load (T)**: ≤ 45
- **Applied rail**: 54E, 56E (BA113A), 60E, BS80, AS60, RE115,
- **Applied clip**: ‘e’ Type, Skl Type, (others on request)
- **Design height (mm)**: 43
- **Hole fixings**: 2, 4
- **Rail cant**: Zero, 1:40, 1:20
- **Optional accessories**: Serrated Washers for lateral adjustment
- **Static stiffness under vertical load (kN/mm)**: 18-35
- **Dynamic to static stiffness ratio**: < 1.4
- **Electrical resistance**: >1 MOhm
- **Product application**: Sydney Rail Network, Perth Rail Network, Queensland Rail Network, Melbourne Rail Network, Hong Kong MTRC, Taiwan, Korea, New Zealand Rail Network

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Guard Rail option also available

delkorrail.com
### Specifications

<table>
<thead>
<tr>
<th>RF193</th>
<th>RF194</th>
</tr>
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<tbody>
<tr>
<td><strong>Axle load (T)</strong></td>
<td>≤ 25</td>
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<tr>
<td><strong>Applied rail</strong></td>
<td>54E, 56E (BA113A), 60E, BS80, AS60, RE115,</td>
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<tr>
<td><strong>Applied clip</strong></td>
<td>'e' Type, Skl Type, K Type (others on request)</td>
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<td><strong>Design height (mm)</strong></td>
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<tr>
<td><strong>Hole fixings</strong></td>
<td>2, 4</td>
</tr>
<tr>
<td><strong>Rail cant</strong></td>
<td>Zero, 1:40, 1:20</td>
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<tr>
<td><strong>Optional accessories</strong></td>
<td>Serrated Washers for lateral adjustment</td>
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<td><strong>Static stiffness under vertical load (kN/mm)</strong></td>
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<td><strong>Dynamic to static stiffness ratio</strong></td>
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<td><strong>Electrical resistance</strong></td>
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<td><strong>Product application</strong></td>
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</table>
Specifications

**RF195**

- **Axle load (T):** ≤ 18
- **Applied rail:** 54E, 56E (BA113A), 60E, BS80, AS60, RE115
- **Applied clip:** e Type, Skl Type, K Type (others on request)
- **Design height (mm):** 40
- **Hole fixings:** 2, 4
- **Rail cant:** Zero, 1:40, 1:20
- **Optional accessories:** Serrated Washers for lateral adjustment
- **Static stiffness under vertical load (kN/mm):** 16-30
- **Dynamic to static stiffness ratio:** < 1.4
- **Electrical resistance:** >1MOhm
- **Product application:** London Underground, Barcelona

**RF196**

- **Axle load (T):** ≤ 18
- **Applied rail:** 54E, 56E (BA113A), 60E, BS80, AS60, RE115
- **Applied clip:** e Type, Skl Type, (others on request)
- **Design height (mm):** 40
- **Hole fixings:** 2, 4
- **Rail cant:** Zero, 1:40, 1:20
- **Optional accessories:** Serrated Washers for lateral adjustment
- **Static stiffness under vertical load (kN/mm):** 16-35
- **Dynamic to static stiffness ratio:** < 1.4
- **Electrical resistance:** >1MOhm
- **Product application:** UK Rail Network
**Eggs for Turnouts**

A rail fastening system for special track work on non-ballasted track forms, including turnouts, diamond crossings and expansion switches.

Delkor Rail’s Eggs for Turnouts were developed specifically for the direct fixation of turnouts, crossovers, diamond crossings and expansion switches on ballastless track forms to provide high vibration attenuation. First used in Cologne, Germany in the late 1970’s the core design remains the same today.

The concept was for discrete elastomeric fasteners to which the turnout baseplates can be simply fixed by means of bolts. Turnouts that are designed with bolt down base plates, can be directly fixed to Eggs for Turnouts using the same base plates. A retrofit option is also available where by the Eggs can be matched drilled to the existing turnout baseplates.

The Eggs for Turnouts can be supplied in five standard sizes which have been developed to accommodate a wide range turnout baseplates.

### Design Features
- Vibration and noise attenuation
- Low static and dynamic stiffness
- Bonded one-piece unit, no wearing parts
- Single rubber dampening element
- Proven fatigue life
- Easy installation either by Top Down or Bottom Up construction methods
- High electrical insulation
- Fail-safe design
- Maintenance-free long-life performance in excess of 30 years
- Bolt connection to turnout base plate can be to standard pattern or matched to suit

### Specifications

<table>
<thead>
<tr>
<th>Specification</th>
<th>Details</th>
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</thead>
<tbody>
<tr>
<td>Axle load (T)</td>
<td>≤ 25 tons</td>
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<td>Optional accessories</td>
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<td>(9 – 16)kN/mm</td>
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<td>Dynamic to static stiffness ratio</td>
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<tr>
<td>Product application</td>
<td>Hong Kong, Australia, New Zealand, Germany, UK, Canada, Taiwan, Singapore</td>
</tr>
</tbody>
</table>
Delkor has over 30 years’ experience in the development of resilient bonded baseplates designed to reduce vibration & noise and providing advice on ballastless track forms. Delkor provides world’s leading ballastless track solutions from retrofitting existing track to new projects to meet the demands of today’s modern rail environments and operating requirements in Light, Metro, General Passenger and Heavy Haul Freight railways.

Using cutting edge state of the art technology Delkor can provide innovative world leading solutions for all types of ballastless track forms. Our experience allows us to tailor solutions to meet the requirements of our clients worldwide.

Together with our parent company Zhuzhou Times New Material & Technology Co. Ltd, Delkor has access to leading edge technology, Research & Development and as well as state of the art manufacturing and production facilities.

Quality
- ISO9001 and ISO/TS16949 Certified

Research & Development
- Over 40 years’ experience in the research, development and design of elastomeric products and rubber to metal bonding
- Advanced research facilities using state of the art software for Finite Element Analysis, 3D modelling, dynamic testing, fatigue simulations and polymer material development
- Access to Testing centre and advanced Research Institute for rubber and plastic elastomeric rail components

Production
- 200,000sq meters production facility for research, trial & mass production including state of the art rubber compound mixing plant
- High production rates to meet the delivery demands of clients