

Form number: PP122F-01

NEW EQUIPMENT & SYSTEM APPROVAL PROFORMA Ref: 10/8641									
Note: the prompts given below are only a guide to the information required for approval. Dependent on the type of equipment or system that requires approval delete any section that is not applicable or include additional information if necessary. Mandatory fields are marked with an asterisk (*).									
1	Equipment or System to be approved *								
	Delkor Alt.1 Resilient Baseplate								
2	Originator								
	Name:         George Stamboulis         Company:         Delkor Rail Pty Ltd								
3	Introduction *								
	The Delkor Alt.1 Resilient Baseplate is a one-piece rail faster that ensures the necessary resilience in all six degrees o movement required on ballast-less track forms. It reduces the dynamic stress on the anchoring elements and the base structure.								
4	Determination of Need *								
	The product is currently in use in ARTC on load bearing ballast logs. It is proposed to use the base plates in conjunction with Boral Bridgewood as a continuous deck to replace transoms. The Bridgewood claims a life of 50 years and the base plates claim in excess of 30 years of maintenance free life.								
5	Significant Change or Not *								
	This change in equipment or system is assessed as MINOR.								
6	Review Panel *								
	John Furness - Manager Standards								
	<ul> <li>Abbie Thomas – Track and Civil Standards Engineer</li> <li>Daniel O'Hara - Structures Manager</li> </ul>								
7	Safety								
	<ul><li>The Alt.1 Baseplate incorporates a fail-safe design.</li><li>The use of the product results in attenuation of noise and vibration.</li></ul>								
8	Performance and Suitability								
	The item is a bonded one-piece unit with no wearing parts.								
	The profiled rubber on the bottom side of the Alt.1 Baseplate 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.								
	The rubber boot is not subjected to any preload, which ensures resistance to aging and provides long maintenance free performance (in excess of 30 years) across a wide variety of applications.								
(i)	Use in other rail networks								
	The Alt. 1 Baseplate has been used extensively within the RailCorp Network (including Glenbrook Tunnel, City Underground, various rail bridges) for many years.								
(ii) Use in the ARTC network									
	Hanbury Dive, various rail bridges.								
(iii)	Issues arising from usage of the equipment/system								
	Due to the height of the base plates, conventional guard rails will have reduced effectiveness.								
(iv)	Changes required to infrastructure or systems for use of the equipment								
	Nil.								



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#### 9 Reliability

These units have been installed in NSW since 1991. The units have performed satisfactorily and have no reported failures. Some units installed at Hanbury Dive in the late 90's debonded due to poor initial installation, poor drainage which caused accelerated corrosion. These units were replaced in 2008.

10	Maintainability									
The baseplates provide a maintenance free track form providing there is no build up of dirt / water pondi baseplates which can cause corrosion.										
	The baseplates are designed to be fail safe in that the Top Plate which holds the rail can not separate from the baseframe that is secured to the sleeper / concrete.									
11	1 Approval *									
	The Delkor Alt.1 Res	silient Baseplate Type RF 192 is to be approved for use a	icross th	ie ARTO	C Networ	k.				
12 Conditions of Approval *										
	Nil.									
13	Does the Originate as set by the Revi	or accept the additional Conditions of Approval ew Panel:	Yes	⊠	No		N/A			
14	Sign off ARTC office use only									
	<b>Review Panel:</b>	111								
	John Furness	Withunes		Date:	16/03/2010 16/03/2010 16-03-2010					
	Abbie Thomas	chemes		Date:						
	Daniel O'Hara	Conil Ollera		Date:						

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# **Delkor ALT.1**



## Highly Robust Rail Fastener for Maintenance-Free Operation





- Vibration and noise attenuation
- Bonded one-piece unit: no wearing parts
- Single rubber dampening element
- Proven fatigue life
- High electrical insulation
- Fail-safe design
- Maintenance-free long life performance in excess of 30 years

www.delkorrail.com

## Highly Robust Rail Fastener for Maintenance-Free Operation





The Delkor ALT.1 is a one-piece, highly robust rail fastener consisting of a top plate and frame, which are durably vulcanised together by means of a natural rubber boot.

The underside of this rubber component is specially profiled and designed to allow movement of the top plate holding the rail. The outer frame of the ALT.1 rail fastener encompasses the top plate at both ends making the unit totally fail-safe.

The ALT.1 rail fastener ensures the necessary resilience in all six degrees of movement required in ballastless track forms. This feature also reduces the dynamic stress on the anchoring elements and the base structure. The profiled rubber on the bottom side of the 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.

Another feature of the ALT.1 is that the rubber boot is not subjected to any preload, which ensures resistance to aging and provides long maintenance-free performance across a wide variety of applications.

Visit www.delkor.com.au for further details and specifications.



Static Stiffness (Cstat): 12-30 KN/mm Material: Metal Parts, St

Lateral Adjustment: Vertical Adjustment: Rail Clips: Electrical Insulation: Deflection: Ratio Cdyn:Cstat: Metal Parts, SG Iron Elastomer, Natural Rubber Up to +/- 15mm Up to 25mm (by packers) Pandrol, Vossloh, etc >1 MOhm Up to 3.5mm <1.4@20Hz

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For further information contact: Delkor Rail Pty Limited, Unit R4, 391 Park Road, PO Box 63 Regents Park NSW 2143 Tel: +61 2 8717 9200. Fax: +61 2 9644 9222.

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