

NEW EQUIPMENT & SYSTEM APPROVAL PROFORMA

Ref: 08-08-11-017

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 *

Rex-Lok Resilient Fastening Assembly for Timber Sleeper Conversion (Lock in shoulders) – Revised Jan 2007

2 Originator *

Name: Robert Rex

Company: Rexlok

3 Introduction *

Step 2 of ARTC's 5 step holistic approach to track maintenance strongly supports the use of resilient fastenings on timber sleepers track.

"Resilient fastenings to provide track continuity and lateral and vertical rigidity. Resilient fastenings improve track modulus and capability"

4 Determination of Need *

Resilient fastenings are far superior to dogspiked track as they provide continuous restraint between rail and sleepers thus making track much more stable and reducing maintenance costs.

This conversion uses existing double shoulder baseplates and can be installed without removal of rail or baseplates and without boring additional holes in the timber sleepers. This can provide significant savings on the conversion of timber sleepers track from dogspiked to resilient fastenings.

This product has been installed in timber sleepers in the NE Line in Victoria for 5 years with satisfactory results. It is considered that this meets the requirements of PP-122 Section 6.3, which states that *"previous assessment and approval...may be taken as a positive assessment of the system...by ARTC"* TEP – 01 has similar requirements and it is considered that these are also met by this prior usage.

It is considered that this approval should be for use in all timber sleepers tracks in ARTC.

5 Significant Change or Not *

This change in equipment or system is assessed as MINOR

6 Review Panel *

- John Cowie – Manager Standards and Systems
- Tim Calver – Standards and Technical Services Engineer
- Graeme Templer – Maintenance Manager, ARTC

7 Safety

Track with resilient fastenings is much more stable than dogspiked track.

8 Performance and Suitability

Laboratory testing has been completed by Uni of SA and Techsearch as follows

Code Requirements – AS 1085.14 – 1990 and AREA standard 1982 clause 1.9.1.12

Requirement	Test result	Comment
Assembly test	Satisfactory in laboratory	See usage outlined above. Safe product if installed correctly. Some limitations on dual gauge track if differential settlement occurs.
Insulation test	N/A	Timber sleepers track – insulation not an issue
Longitudinal restraint test	Met requirements of AREA 1982 clause 1.9.1.12	Satisfactory
Fastening uplift test	Met requirements of AS 1085.14 App G	Satisfactory

(i) Use in other rail networks

This installation has been used in the following locations:

- Union Pacific, Canada, San Francisco's Bart track, QR, WA and India.

(ii)	Use in the ARTC network	<ul style="list-style-type: none"> Initial trials in NSW in 2006 320 kms of the NE Line in Victoria – satisfactory service for 5 years. In SA before 1990 and on the Leigh Creek Line. 			
(iii)	Issues arising from usage of the equipment/system	Following some installation problems in NSW, the inserts were slightly modified to enable more consistent use.			
(iv)	Changes required to infrastructure or systems for use of the equipment	<p>Rex-Lok Inserts Part Nos. 06/G and 06/F</p> <p>Drawing No. 06/G Edition B: This is the Rex-Lok gauge side insert for NSW. This insert is suitable for 47kg, 53kg and 60kg rail. With Trak Lok B296 Clips and Rex-Lok RL/10 Clips.</p> <p>Drawing No. 06/F Edition B: This is the Rex-Lok field side insert for NSW. This insert is suitable for 47kg, 53kg and 60kg rail. With Trak Lok B296 Clips and Rex-Lok RL/10 Clips.</p> <p>Copies of both drawings are attached.</p> <p>Both the "F" & "G" insert have had 3mm removed from the back of the insert to allow the insert to sit in the "V" of the clip.</p> <p>The "G" inserts will be colour coded for ease of identification, this will assist with application and inspection, each insert will have "F" & "G" engraved on them.</p> <p>The front of both inserts has a 2mm protrusion on the head to prevent the applicator tool from slipping off during application.</p> <p>Rex-Lok Applicator Tool</p> <p>The previous tool weighed 8.5kg the modified tool weighs 4.5kg.</p> <p>A roller bearing has been added, this rides in the middle of the clip making application easier.</p> <p>Rubber grips will be installed on the handles.</p> <p>Sketch drawing attached.</p>			
9	Reliability	Rex-Lok clips are manufactured in accordance with ISO 9001.			
10	Maintainability	Proven in Vic NE Line and in SA over more than 7 years			
11	Approval *	Rex-Lok Resilient Fastening Assembly Part Nos. 06/G and 06/F, RL/10 Clips, Rex-Lok Applicator Tool			
12	Conditions of Approval *	<ul style="list-style-type: none"> Not to be used on dual gauge track – unless it can be demonstrated to the GM, Asset Management that there is no chance of differential settlement occurring Appropriate standards, specification, procedures are revised to match this option That Corridor/Delivery/Asset/Procurement Managers must: <ul style="list-style-type: none"> Assess each site to determine suitability for this product Assess cost/benefit of this process at locations chosen Ensure that installation is in accordance with the manufacturers instructions That the supplier remains accredited to ISO 9001 specifically for these products and ARTC is advised on a 12 monthly basis that accreditation is current. ARTC reserves the right to conduct its own audits of the manufacture and supply of these components to AS 19011:2003. 			
13	Does the Originator accept the additional Conditions of Approval as set by the Review Panel:	<table style="width: 100%; border: none;"> <tr> <td style="width: 33%; text-align: center;">Yes <input type="checkbox"/></td> <td style="width: 33%; text-align: center;">No <input type="checkbox"/></td> <td style="width: 33%; text-align: center;">N/A <input checked="" type="checkbox"/></td> </tr> </table>	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input checked="" type="checkbox"/>
Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input checked="" type="checkbox"/>			
14	Sign off	ARTC office use only			
	Review Panel:				
	John Cowie	Date: 3.1.2007			
	Tim Calver	Date: 3-1-07			
	Graeme Templer	Date: 8-1-07			

Rex-Lok Lightweight (4.5kg) Applicator Tool

