NEW EQUIPMENT & SYSTEM APPROVAL PROFORMA

Ref: *08-08-11-092*

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** *

GUARD RAILS ON DUAL GAUGE CONCRETE SLEEPERS.

2 **Originator** *

Name: Frank Lander Company: ARTC

3 **Introduction** *

The western leg of the triangle is on an embankment about 2m above ground level and with large acid tanks nearby on the eastern side. The track functions as both an entry/exit for Port Flat Yard for trains travelling to/from Outer Harbour and also as a head shunt for Port Flat Yard.

4 **Determination of Need** *

The project risk assessment determined that guard rails should be applied to 50 m of concrete sleepered track.

5 **Significant Change or Not** *(as determined by the Manager Standards)* *

This change in equipment or system is assessed as **MINOR**

6 **Review Panel** *(as determined by the Manager Standards)* *

- John Furness - Manager Standards
- Tim Calver – Standards & Technical Services Engineer
- Ian Domleo – Senior Track & Civil Engineer

7 **Safety**

The design was carried out by Janus Railway and Civil (Roger Wyatt).

The guardrails are s/h 100 lb AS fixed with rigid steel clips and type Ss8 screwspikes and high tension double helical spring washers type Fe6.

The screwspikes are driven into moulded HDPE open ended dowels factory retrofitted to the concrete sleepers by grouting into cored holes.

The adhesive used is Epirez 133 General Purpose Epoxy Mortar Binder. The manufacturer cites one application being the grouting of load bearing bolts and supports in concrete. The external profile of the dowels ensures a mechanical connection with the grout and this with the adhesive will ensure that the full pullout strength of the dowel will be realized.

A third party design review was carried out by SKM.

8 **Performance and Suitability**

The Ss8 screwspike in HDPE dowel in concrete will have a higher resistance in lateral bearing and direct pull-out than a cut spike in timber.

The fastening conforms to the following standards:

ARTC Code of Practice	Section 1 – Rail
ARTC Standards	BDS-05 – Guardrails – Configuration standards

Design documentation attached.

(i) **Use in other rail networks**

N/A

(ii) **Use in the ARTC network**

N/A

(iii) **Issues arising from usage of the equipment/system**

	No impact on train operations or signalling. A detailed inspection and maintenance plan is attached.
(iv)	**Changes required to infrastructure or systems for use of the equipment** N/A
9	**Reliability** As per standard ARTC guardrails (or greater).
10	**Maintainability** Standard components throughout. A maintenance plan has been prepared covering routine inspections, loose and missing components.
11	**Approval** * **GUARD RAILS ON DUAL GAUGE CONCRETE SLEEPERS.**
12	**Conditions of Approval** * ***<<NOTE: Review Panel may add additional Conditions of Approval>>***

13	**Does the Originator accept the additional Conditions of Approval as set by the Review Panel:**	Yes	☐	No	☐	N/A	☐

14	**Sign off**	***ARTC office use only***
	Review Panel:	
	S. S. Curl	Date: 24/12/07
		Date: 18/12/07
	Ian Dumbo	Date: 18/12/07