

NEW EQUIPMENT & SYSTEM APPROVAL PROFORMA

Ref: 08-08-11-114

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 *

Holdfast rubber level crossing panels in low and medium speed areas.

2 Originator *

Name: Hassan Elaina

Company: ARTC

3 Introduction *

Holdfast rubber panels are a removable level crossing surface made from recycled rubber. They have been used in Victoria and in the UK successfully. Copy of Network Rail approval attached.

Panels are available in the following grades:

STANDARD – Suitable for most crossing situations

EXTREME CONDITION – where particularly heavy loads and acute angles are encountered such as dockland areas with constant heavy goods traffic

AGRICULTURAL – light traffic use

PEDESTRIAN – foot traffic only

TRACK ACCESS PANELS – for moving plant and heavy machinery across the line during construction

4 Determination of Need *

Most level crossings in the ARTC network have asphalt or concrete interfacing with rail. The Holdfast panels offer another option which may be preferable to these methods under certain conditions. It is somewhat similar to, and a competitor with, the Strail products approved by ARTC in 2006.

A wider range of approved products is good for ARTC commercially and allows Assets staff to choose the option which best suits site conditions.

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
- Peter Micenko
- Alice Weatherford

7 Safety

Safety is an extremely important consideration at level crossings. Important points are:

- Flangeways should be as narrow as possible (while still allowing train wheels through). This is to avoid wheels of vehicles such as bicycles, scooters and wheelchairs from falling into flangeways and potentially becoming caught. It is also important that flangeways create as little tripping hazard to pedestrians as possible.
- Skid resistance should be sufficient not only when the panels are new, but after a number of years' usage.
- Stability of panels. They should not depress over time leading to poor surface quality, and should not move laterally, which could potentially lead to gaps between panels which would be a hazard for pedestrians and small vehicles as above. They should also be secure enough (through fastening or self-weight) that they cannot be lifted out of place (for instance by vandals or changes in air pressure as large vehicles pass over).

Holdfast level crossing panels have been shown to address all of these points.

8 Performance and Suitability

Australian standards provide little guidance on this type of product.

In terms of skid/slip resistance, the Holdfast panels easily comply with the superseded AS 3661.1

The new standard AS 4586 does not set required levels of skid resistance. Instead it describes methods of measuring skid resistance and sets different levels of skid resistance based on the results. The Holdfast panels were tested using these methods as part of the Network Rail approval, as this part of the Australian Standard is based on a British Standard. The panels reach the highest class of skid resistance defined in AS 4586, which is higher than the requirement of the superseded AS 3661.

ARTC standards require that the flangeway be a maximum of 60 mm wide and up to 50 mm deep. The Holdfast panels meet this requirement with flangeways which are 60 mm wide and 40 mm deep.

ETG-16-01 Grade Crossings clause 16.5.1.3 (b5) requires that sleepers be spaced a maximum of 500 mm apart. This

product requires sleeper spacing to be 600 mm centre to centre.
Design, installation and maintenance information from Holdfast is attached.

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

V-Line have had a number of these in track for approximately 6 years. Ken McLean of Downer EDI Works inspected one located at Old Calder Highway, Diggers Rest and gave generally positive feedback on its performance (see attached email).

Peter Munro from V-Line was contacted by phone and gave similar feedback.

Holdfast panels have been approved by Network Rail (formerly RailTrack) in the UK since 1999 (see attached certificates).

They have also been approved for use in Greece and Romania

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

1 in Gouldburn area

2 in Wagga Wagga

1 at Illabo

These were all installed under a waiver in 2008 so long-term performance cannot be judged yet, but according to Hassan Elaina they are performing well so far.

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

Feedback received on use of Holdfast panels has indicated that correct installation is essential to getting the best performance from the level crossings, particularly in terms of panel stability.

(iv) **Changes required to infrastructure or systems for use of the equipment**

Sleeper spacing should be 600 mm centre to centre. Changes will only need to be made if this is not the case.

9 **Reliability**

N/A

10 **Maintainability**

Visual inspections. Panels may need to be adjusted if they shift over time due to traffic (Phone conversation with Owen Newell of Baron Rubber).

The fact that panels are only held down by self-weight makes maintenance of other track components at the level crossing much easier than at other types such as asphalt level crossings. However, if panels are removed for track maintenance, care must be taken to replace the panels correctly to ensure stability of the surface.

11 **Approval ***

RH-1301GPN – Gauge Panel – HDEC

RH-1302FPN – Field Panel – HDEC

RH-1401GPN – Gauge Panel – Austrack 217-20s-F

RH-1402FPN – Field Panel – Austrack 217-20s-F

RH-0187-A – Wing Gauge Base Plate

RH-0187-B – Standard Gauge Base Plate

RH-0250-C – Wing Field Base Plate

RH-0250-D – Standard Field Base Plate

RH-0248 – Chain Guard

RH-PPAEB2.4M – 2.4m x 200 x 300 x 10 PP Edge Beam

RH-PPAEB3M – 3m x 200 x 300 x 10 PP Edge Beam

Other Edge beam lengths as appropriate

12 **Conditions of Approval ***

Feedback from Peter Munro at V-Line and Ken McLean from Downer EDI indicates that correct installation is essential. Representative of Holdfast's Australian distributors to be present for first installation in any district.



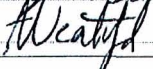
Installation and maintenance information to be provided with each level crossing.

Sleepers must be spaced at 600 mm centre to centre at the level crossing.

Type of panels to be used must be appropriate to level of traffic.

PANELS TO BE USED ONLY IN LOWER SPEED AREAS, PARTICULARLY WHERE HEAVY TRUCKS WILL BE PASSING OVER THEM. APPROVAL IS ONLY FOR SUBURBAN AREAS WITH 60 KM/H OR LOWER SPEED LIMITS.

13	Does the Originator accept the additional Conditions of Approval as set by the Review Panel:	Yes	<input type="checkbox"/>	No	<input type="checkbox"/>	N/A	<input type="checkbox"/>
----	--	-----	--------------------------	----	--------------------------	-----	--------------------------

14	Sign off	<i>ARTC office use only</i>
	Review Panel:	
		Date: 13/02/2009
		Date: 13/2/09
		Date: 13/2/09

Attachments

1. Promotional material including installation and maintenance information
2. Railtrack 1999 Certificate of Acceptance
3. Network Rail 2007 full Certificate of Acceptance
4. Copy of report on testing carried out by Rapra Technology on Holdfast panels
5. Email from Ken McLean re inspection of level crossing at Old Calder Highway, Diggers Rest.

Certificate of Acceptance

Certificate No: PA05/00047
Effective date: 11/02/2005

Issue: 2 Date: 11/02/2005
Page 1 of 4

Product:	HoldFast Full Depth Rubber Level Crossings HoldFast Track Access Points (T.A.P.)
Manufacturer:	HoldFast Level Crossings Ltd. Brockenhurst, Chedworth, Cheltenham, Gloucestershire. GL54 4AA

The product above is accepted for use on the Network Rail infrastructure within the defined scope of acceptance and any specific conditions in the certificate.

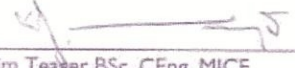
Scope of Acceptance

The HoldFast Full Depth Rubber Level Crossings are for use, as defined in Network Rail Company specification RT/CE/S/040, as (a) new public vehicular level crossings, (b) a replacement for entire level crossing surface systems on an existing public vehicular level crossing, (c) new/replacement private vehicular, footpath or bridleway crossings.
The HoldFast Track Access Points (T.A.P.) are for use as temporary/permanent access systems to enable access to sites of work by road/rail vehicles, or for emergency access.

SPECIFIC CONDITIONS (Manufacturer/Supplier)

- In accordance with RT/CE/S/040, a user manual shall be supplied with each complete level crossing.
- This certificate recognises that the panels used in these systems are manufactured on behalf of HoldFast level Crossings Ltd by Rosehill Polymers Ltd, Head Office Rose Hill Mills, Beech Road, Sowerby Bridge, West Yorkshire. HX6 2JT
- Any deficiency affecting the product quality, functionality and safety integrity shall be notified in writing within 48 hours (including corrective action undertaken or proposed) to Network Rail HQ Acceptance Services.
- Manufacturers/Suppliers are responsible for ensuring that they are in possession of the latest relevant standards and/or drawings, and for ensuring that their products are compliant.
- Any proposed change to the product configuration (to the actual product or its application) shall be put forward in writing to Network Rail, HQ Acceptance Services.

Authorised by:


Kim Teager BSc, CEng, MICE
Professional Head of Structures Engineering

RAILTRACK

Certificate of Acceptance

Certificate No: PA05/047
Effective date: 24th May 1999

Issue: 1

Date: 24th May 1999
Page 1 of 2

Product: HoldFast Full Depth Rubber Level Crossing.

Manufacturer: HoldFast Level Crossings Ltd.
P.O. Box 170, Bishops Cleeve,
Cheltenham,
Gloucestershire GL52 4US

General Conditions:

The product identified above is accepted for use on Railtrack infrastructure within the scope defined below.

Acceptance of any change to the product is liable to a demonstration that risk arising from the change has been assessed and is negligible. Corresponding change in product configuration shall be notified to Railtrack.

Any deficiency affecting the safety of the product shall be reported in writing to Railtrack.

Scope of Acceptance:

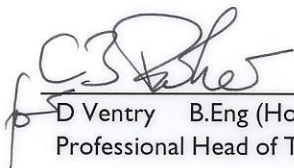
For use, as defined in Railtrack Line specification RT/CE/S/040, as (a) new public vehicular level crossings, (b) a replacement for entire level crossing surface systems on an existing public vehicular level crossing, (c) new/replacement private vehicular, footpath or bridleway crossings.

Specific Conditions:

In accordance with RT/CE/S/040 a user manual shall be supplied with each complete crossing.

See notes overleaf.

Signature:



D Ventry B.Eng (Hons), Ceng, FICE
Professional Head of Track Engineering