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Level 3 Module

Use of Traction Gel Applicators

Endorsement and Authorisation

For endorsement and authorisation, please refer to
NR/L3/TRK/3510

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Issue record

Issue	Date	Comments
1	September 2011	1 st issue

Compliance

This Network Rail standard is mandatory and shall be complied with by Network Rail and its contractors if applicable from 3 September 2011.

When this standard is implemented, it is permissible for all projects that have formally completed GRIP Stage 3 (Option Selection) to continue to comply with the Issue of any relevant Network Rail Standards current when GRIP Stage 3 was reached and not to comply with requirements contained herein, unless stipulated otherwise in the scope of the standard.

Reference documentation

NR/L2/OCS/096, *Determining high risk sites for low rail adhesion*

NR/L3/OCS/096, *Low rail adhesion sites – risk assessment process*

NR/L3/TRK/TEF3040, *Rail friction management equipment – inspection and maintenance record*

NR/L3/TRK/TEF3219, *Rail friction management equipment – site specific assessment*

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1 Purpose

This standard gives the minimum requirements for the siting, installation, commissioning, decommissioning, inspection, filling and maintenance of traction gel applicator systems designed and approved for Network Rail's permanent way.

2 Scope

Unless otherwise stated, the requirements of this standard shall apply to all rail-mounted traction gel applicator systems fitted or proposed to be fitted to plain line running rails.

This standard applies to permanent way that is undergoing renewal as well as to permanent way which is in normal maintenance.

3 Roles and responsibilities

The requirements of this standard shall be complied with by anyone involved in the specification, purchase, siting, installation, commissioning, decommissioning, inspection, filling and maintenance of rail-mounted traction gel applicator systems.

The installation, commissioning, decommissioning, inspection, filling and maintenance of rail-mounted traction gel applicator systems shall be carried out by Maintenance personnel, unless alternative arrangements are made at route level between Network Operations and Maintenance.

4 Definitions

For the purposes of this standard, the following terms and definitions apply.

Term	Definition
Applicator	The rail mounted component that delivers adhesion modifier onto the top of the rail from the field side.
ADAS survey	Prediction of the risk of leaf fall onto Network Rail infrastructure.
Competent person	Individual with the ability to perform a particular activity to a prescribed standard, in this case the installation, inspection, filling and maintenance, commissioning and decommissioning of track-mounted traction gel applicators.

The ability to undertake responsibilities and to perform activities to a recognised standard on a regular basis. A combination of practical thinking skills, experience and knowledge and may include a willingness to undertake work activities in accordance with agreed standards, rules and procedures, in addition to having undertaken an approved training course covering the equipment to be installed / maintained.

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Term	Definition
Adhesion modifier / traction gel	Compound applied to the top of the rail head to increase friction levels, having a target value above 0.3.
High rail	The outer rail in a curve, generally raised up relative to the inner rail due to the applied cant.
Low rail	The inner rail in a curve, generally lower than the outer rail due to the applied cant.
Pump	Electrically powered pump located inside the trackside cabinet.
Rail head contamination	A build up contaminants on the rail head causing low adhesion between wheel and rail. Autumn leaf fall is a major source of contamination.
Low adhesion	Low friction levels between wheel and rail (<0.1) causing loss of traction and/or wheel slip under braking.
Traction gel applicator (TGA)	Trackside assembly delivering adhesion modifier to the top of the rail head (either or both rails), consisting of an electronic control unit, adhesion modifier hopper, electrically powered pump, rail-mounted non-contact wheel sensor, rail mounted applicators and all interconnecting hoses and couplings.

5 Identifying sites for TGAs

Selecting appropriate sites on which to install TGAs is a two stage process.

5.1 Risk assessment of low adhesion sites

Network Operations identify locations where there is a high risk of low adhesion between the wheel and the rail on Network Rail managed infrastructure, using the risk assessment process defined in NR/L2/OCS/096 and NR/L3/OCS/096.

TGAs may be fitted at locations that meet the following criteria:

- Performance related – where delays equal to or greater than 750 minutes have been incurred at a known low adhesion location.
- Safety
 - o Where an area has been designated a high risk site for leaf fall (scoring 26 or more as part of an ADAS survey).
 - o Approaches to stations where 4 or more overruns have been encountered in the last 3 years.
 - o Locations where problems are regularly encountered with gaining traction pulling away from stations or when ascending gradients.
 - o Where the overall modified score resulting from the infrastructure risk assessment equates to 500 or above (SAT scored signals).
 - o Where the train operator / freight operator feels there is a specific reason for the placement of a TGA.