

20-011 Managing the risk of low adhesion between the wheel and the rail

[This page should be deleted at the publication stage of the project]

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Purpose:	Approval to publish		
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Lead industry committee:	Traffic Operation and Management Standards Committee (TOM SC)	Date:	01 March 2022

Decision

Traffic Operation and Management Standards Committee (TOM SC) is asked to:

DECIDE if the revision of RIS-8040-TOM issue 2 delivers the intentions of the proposal for change.

DECIDE if the revision of RIS-8040-TOM issue 2 is in a suitable state for publication.

APPROVE that the revision of RIS-8040-TOM issue 2 is published and GEGN8540 issue 2 is withdrawn.

20-011 Managing the risk of low adhesion between the wheel and the rail

This business case for change has been developed to support standards committees in taking decisions related to changes to standards, it includes an assessment of the predicted impacts arising from the change.

Proposed documents

Number	Title	Issue
RIS-8040-TOM	Managing Low Adhesion	2

Superseded documents

Number	Title	Issue
RIS-8040-TOM	Low Adhesion between the Wheel and the Rail - Managing the Risk	1

Documents for withdrawal

Number	Title	Issue
GEGN8540	Guidance on Low Adhesion between the Wheel and the Rail – Managing the Risk	2

Summary

Background and change

The requirements to manage low adhesion between the wheel and the rail are contained in RIS-8040-TOM issue 1 (published in 2009) and the supporting guidance is contained in GEGN8540 issue 2 (published in 2015). Both documents required a fundamental review to develop an up-to-date framework to manage low adhesion that is easier to follow, and that includes:

- Referencing the findings from up-to-date research relating to managing the risk of low adhesion.
- A common approach to the development of site-specific plans and what they should contain.
- Industry good practice on low adhesion forecasting.

Industry impact due to changes

Impact areas	Scale of impact	Estimated value £ 000's
A. Legal compliance and assurance	Neutral	NA
B. Health, safety and security	Medium	£0.125 million
C. Reliability and operational performance	Medium	£1.0 million
D. Design and maintenance	Neutral	NA
E. People, process and systems	(Low)	Low
F. Environment and sustainability	Neutral	NA
G. Customer experience and industry reputation	Low	Low
Total value of industry opportunity =		Around £1.1 million
The standards change contribution to the total value of industry opportunity		
<input type="checkbox"/> None or low	<input type="checkbox"/> Minor but useful	<input type="checkbox"/> Moderate
		<input checked="" type="checkbox"/> Important / essential
		<input type="checkbox"/> Urgent / critical

Detail

1. What were the objectives associated with this change?

Objective 1 – Provide industry with an up-to-date framework to manage the risk of low adhesion between the wheel and the rail

1.1 The requirements to manage low adhesion between the wheel and the rail are contained in RIS-8040-TOM issue 1 (published in 2009) and the supporting guidance is contained in GEGN8540 issue 2 (published in 2015). Both documents required a fundamental review to develop an up-to-date framework to manage low adhesion that is easier to follow, and that includes:

- Referencing the findings from up-to-date research relating to managing the risk of low adhesion.
- A common approach to the development of site-specific plans and what they should contain.
- Industry good practice on low adhesion forecasting.

2. How has the content in the standard changed to achieve the objectives?

Objective 1 – Provide industry with an up-to-date framework to manage the risk of low adhesion between the wheel and the rail

- 2.1 Content from GEGN8540 issue 2 that is relevant has been incorporated into RIS-8040-TOM issue 2. Therefore, GEGN8540 will be withdrawn.
- 2.2 The proposed RIS-8040-TOM issue 2 has been re-structured with a framework to manage low adhesion that is easy to follow and builds upon the requirement in ROGS¹ on transport operators to cooperate to achieve a safe operation of the railway, including reviewing site-specific plans and sharing good practice.
- 2.3 Relevant research has been referenced within the document. At the five-year review of RIS-8040-TOM issue 1, some industry stakeholders requested to mention the impact of leaf types on low adhesion. This is not included in RIS-8040-TOM issue 2 because it is not within the scope the standard covers, which is a framework for the management of low adhesion at high-risk sites by developing site-specific plans. For that reason, the standard only mentions leaf forecasting as a local condition to consider.

3. How urgently did the change need to happen to achieve the objectives?

- 3.1 The risk of low adhesion is low – 0.0354 Fatalities and Weighted Injuries per year (FWI/yr)²; however, the consequences can be high. Therefore, it is important for the rail industry to have an up-to-date framework to manage the risk.

¹ ROGS – Railways and Other Guided Transport Systems (Safety) Regulations 2006 (as amended).

² Safety Risk Model (SRM) v8.5.0.2 for version 2 of the ADHERE strategic case

- 3.2 This project features in RSSB's business plan for 2021/22, where we have committed to develop the draft content ready for industry consultation before the end of March 2022, which will facilitate publication of RIS-8040-TOM issue 2 in the early part of the following financial year 2022/23.

4. What are the positive and negative impacts of implementing the change?

Justification of impact, scale and quantification for the seven impact areas

A. Legal compliance and assurance

- 4.1 Transport operators have a duty to cooperate under ROGS to make sure the safe operation of the railway. RIS-8040-TOM issue 2 builds upon this duty by providing a common framework to manage the risk of low adhesion. The changes to the standard will continue to support the duty to cooperate; therefore, the impact on legal compliance and assurance will be neutral.

B. Health, safety and security

- 4.2 Managing the risk of low adhesion prevents incidents involving trains travelling too far or too fast, which can lead to adverse events of high consequence. The ADHERE strategic case estimated this to be £0.5 million per year. If we use the conservative assumption that there is a 5% reduction in risk as a result of this standards change, then the value to industry would be £0.125 million over five years.

C. Reliability and operation performance

- 4.3 The aim of the changes to the standard is to improve the development of site-specific plans that include a minimum set of measures and information, so that transport operators mitigate the risk of low adhesion, the benefits include:
- A reduction of adverse events involving trains travelling too far or too fast.
 - A reduction of situations where trains struggle to start, accelerate or maintain their speed, which can lead to longer journey times and delays to services.
- 4.4 The GB rail industry encountered an annual average of 380,000 delay minutes due to low adhesion over 2015 to 2018 costing approximately £19 million per year³. A conservative assumption is that this change contributes to a 1% reduction of these delays, this could save industry around £1 million over five years.
- 4.5 Over the financial years 2010/11 to 2018/19, the GB rail industry encountered an average 1% loss in Public Performance Measure Moving Annual Average (PPM MAA) each autumn. The loss was double of that experienced in winter and eight times higher than in summer⁴. Having an agreed framework to manage the risk of low adhesion may help to reduce the loss in PPM MAA.

³ The average cost to industry of a delay is £50 per minute.

⁴ ADHERE Strategic Case, page 4.

D. Design and maintenance

- 4.6 RIS-8040-TOM issue 2 continues to acknowledge train borne technology that can improve braking performance under low adhesion conditions, by referencing the relevant standards. There will not be an impact in this area as a result of this change.

E. People, process and systems

- 4.7 The standard will reflect good industry practice in the development of low adhesion site-specific plans. Transport operators may need to update their processes and procedures to consider any changes to the standard that they do not already apply. The implementation of some measures that may not have been considered in the past may also involve an additional cost to the industry.

F. Environment and sustainability

- 4.8 This standard is about setting out a process of cooperation between transport operators. Therefore, the impact to the environment is considered to be neutral.

G. Customer experience and industry reputation

- 4.9 Customer experience is negatively affected by the effects of low adhesion, as the service provided during periods of low adhesion is often disrupted, resulting in lower levels of customer satisfaction. Therefore, effective management of the risks associated with low adhesion can improve the customer experience and positively influence customer satisfaction levels.

5. What is the contribution of this standards change in realising the value to industry opportunity?

- 5.1 It is estimated that poor adhesion cost industry and the wider society an estimated £355 million per year, with a cost each autumn estimated to be around £4.2 million⁵. The proposed changes to the standard aim to improve site-specific plans that mitigate the risk of low adhesion. This is an 'important and essential' contribution to industry and is expected to deliver a value of around £1.1 million over five years.

6. What was the effort required by RSSB to make the change?

- 6.1 To develop RIS-8040-TOM issue 2, RSSB actively engaged with the Seasonal Challenge Group and the Adhesion Research Group, consulting with them throughout the drafting for information and feedback.
- 6.2 Consultation comments received on the five-year review of RIS-8040-TOM issue 1 were considered and included where relevant.

7. Did RSSB deliver against industry's expected timescales?

- 7.1 Yes, as this was an industry priority, RSSB resources were allocated to work on this project, which reached the consultation stage of the standard by the end of financial year 2021/22 and publication of the standard early in the following financial year 2022/23.

⁵ <https://www.rssb.co.uk/what-we-do/key-industry-topics/adhesion>

8. How will the industry implement the change?

- 8.1 The content of RIS-8040-TOM issue 2 will enable transport operators to review their existing arrangements and identify areas that could potentially be improved. However, transport operators already follow the framework described in the standard as it was contained in the RIS-8040-TOM issue 1 and GEGN8540 issue 2.
- 8.2 Feedback from Seasons Delivery Managers was that they currently use risk assessments, the sectional appendix and a removal plan to track measures required at sites. RIS-8040-TOM issue 2 will introduce a change to their process to manage low adhesion. The infrastructure manager will be able to use findings from risk assessments to decide if a site affected by low adhesion requires a site-specific plan.
- 8.3 To communicate and explain this change RSSB will present at the Adhesion Research Group and Seasonal Challenge Working Group meetings and produce industry briefings.

9. How will RSSB assess whether the change is achieving the objectives?

- 9.1 RSSB will review RIS-8040-TOM issue 2 one year after its publication to assess whether its content is fit for purpose. During the review we will seek specific feedback from transport operators that have adopted and implemented the changes and feedback from the Seasonal Challenge Group and the Adhesion Research Group.

Appendix A Disposition Table

A.1.1 A disposition table maps changes between old and new documents.

A.1.2 Description of text used in the 'Way forward' column of the disposition table:

- No change
- Redrafted – No material change, content reworded to improve clarity (editorial change)
- Revised – Material change to content
- Withdrawn
- Converted to guidance
- Converted to requirement
- New.

Table A1: RIS-8040-TOM Issue 1 to RIS-8040-TOM Issue 2

From RIS-8040-TOM Issue 1	To RIS-8040-TOM Issue 2	Way forward	Comments	Objective
2.1.1.1 General requirements	2.3.1 Implementing site-specific plans	Revised	Infrastructure managers own the fixed infrastructure assets and therefore have the responsibility of implementing measures. They can do this with the assistance of the railway undertakings, but it is ultimately an infrastructure requirement.	1
2.1.2.1 Establishing site-specific plans	2.2.1 Development of site-specific plans to manage low adhesion at high-risk sites	Revised	It is the infrastructure manager who develops the site-specific plans and collaborate with the railway undertaking before implementation to verify the plan is appropriate for the location.	1
2.1.2.2 Establishing site-specific plans	2.2.1 Development of site-specific plans to manage low adhesion at high-risk sites	Revised	This is now included within the same requirement to develop site-specific plans and it is clear it is the infrastructure manager who develops the plans.	1

From RIS-8040-TOM Issue 1	To RIS-8040-TOM Issue 2	Way forward	Comments	Objective
2.1.3.1 Content of site-specific action plans	Appendix A Content of site-specific plans	Converted to guidance	This section has been expanded to include and consider a set of measures and information in site-specific plans, based on industry good practice.	1
2.1.3.2 Content of site-specific action plans	G 2.2.7 Development of site-specific plans to manage low adhesion at high-risk sites	Converted to guidance	This has also been expanded to describe good practice to check if mitigation measures could be a risk to train detection systems.	1
2.1.4.1 Review of site-specific action plans	2.4.1 Monitoring site-specific plans	Revised	As the asset owner the infrastructure manager is required to monitor the plans for effectiveness, they may do this with the co-operation of railway undertakings.	1
2.1.4.2 Review of site-specific action plans	2.5.3 Review and update site-specific plans	Converted to guidance	As the asset owner the infrastructure manager is required to review and update as required. Guidance sets out examples of when it is good practice to do so.	1
2.1.4.3 Review of site-specific action plans	G2.5.4 Review and update site-specific plans	Converted to guidance	Guidance has been listed with details to consider during a review including driver feedback.	1
2.2.1.1 Requirements for infrastructure managers	G2.1.3 Identifying high-risk sites for low adhesion	Converted to rationale	Better suited as rationale to support the requirement to identify high-risk sites and describes why the infrastructure manager should control the risk of low adhesion.	1
2.2.1.2 Requirements for infrastructure managers	2.1.1 Identifying high-risk sites for low adhesion	Revised	Infrastructure managers own the fixed infrastructure assets and therefore have the responsibility of identifying high-risk sites. They can do this with the assistance of the railway undertakings, but it is ultimately an infrastructure manager requirement.	1
2.2.1.3 Requirements for infrastructure managers	2.1.1 Identifying high-risk sites for low adhesion	Revised	This is now included within the same requirement to identify high-risk sites and it is clear it is the infrastructure manager who identifies the sites.	1

From RIS-8040-TOM Issue 1	To RIS-8040-TOM Issue 2	Way forward	Comments	Objective
2.2.2.1 Assessment of risks	2.1.1 Identifying high-risk sites for low adhesion	Revised	This is now included within the same requirement to identify high-risk sites and it is clear it is the infrastructure manager who identifies the sites.	1
2.2.3.1 Actions to be taken when low or exceptionally poor rail-head conditions have been reported at a location not having a site-specific action plan	2.3.3 Implementing site-specific plans	Revised	Revised as a clearer requirement for the infrastructure manager to inform railway undertakings that low adhesion is reportable, the action they are taking and how effective they are.	1
2.2.3.2 Actions to be taken when low or exceptionally poor rail-head conditions have been reported at a location not having a site-specific action plan	2.3.3 Implementing site-specific plans	Revised	The infrastructure manager is required to inform railway undertakings that low adhesion is reportable, the action they are taking and how effective they are.	1
2.2.3.3 Actions to be taken when low or exceptionally poor rail-head conditions have been reported at a location not having a site-specific action plan	2.5.3 Review and update site-specific plans	Converted to guidance	Redrafted as a list of when it is good practice to review and update plans, not only after a site assessment.	1
2.3.1.1 Requirements for railway undertakings	G2.3.8 Implementing site-specific plans	Converted to guidance	Converted to guidance that rule book GERT8000-TW1 sets out the rules for signallers and drivers when rail adhesion is reportable.	1

From RIS-8040-TOM Issue 1	To RIS-8040-TOM Issue 2	Way forward	Comments	Objective
2.3.1.2 Requirements for railway undertakings	G2.5.4 Review and update site-specific plans	Converted to guidance	Converted to guidance to describe that reviewing site-specific plans can be supported by driver feedback.	1

Table A2: GE/GN8540 Issue 2 to RIS-8040-TOM Issue 2

From GE/GN8540 Issue 2	To RIS-8040-TOM Issue 2	Way forward	Comments	Objective
G2.1.1 Joint requirements for infrastructure managers and railway undertakings	G2.2.4 Development of site-specific plans to manage low adhesion at high-risk sites	Converted to rationale	Better suited as rationale to support the requirement to develop plans. Plans should be developed collaboratively as the ROGS requirement places a duty on transport operators to cooperate to make sure the railway is safe.	1
G2.1.2 Joint requirements for infrastructure managers and railway undertakings	G2.2.10 Development of site-specific plans to manage low adhesion at high-risk sites	Redrafted	Redrafted as a list of guidance to include when collaborating and sharing knowledge.	1
G2.1.3 Joint requirements for infrastructure managers and railway undertakings	G2.2.4 Development of site-specific plans to manage low adhesion at high-risk sites	Converted to rationale	Better suited as rationale to support the requirement to develop plans to describe how this benefits the development of site-specific plans.	1

From GE/GN8540 Issue 2	To RIS-8040-TOM Issue 2	Way forward	Comments	Objective
G2.1.4 Joint requirements for infrastructure managers and railway undertakings	Appendix A A.5.1 G2.3.7 Implementing site-specific plans Appendix B B1 Sharing seasonal information with drivers	Revised Revised	Revised in a list of information to include in a site-specific plan. Revised as guidance to share forecast information and warnings with drivers. Revised as guidance on how to share seasonal information with drivers.	1
G2.1.5 Joint requirements for infrastructure managers and railway undertakings	G2.2.4 Development of site-specific plans to manage low adhesion at high-risk sites	Converted to rationale	Better suited as rationale to support the requirement to develop plans and how this benefits the development of site-specific plans.	1
G2.1.6 Joint requirements for infrastructure managers and railway undertakings	G2.2.5 Development of site-specific plans to manage low adhesion at high-risk sites	Revised	Revised to describe how a risk assessment can aid the development of plans. It is the responsibility of the infrastructure manager to decide the best method to carry out any risk assessments by using their own policies or procedures.	1
G2.1.7 Joint requirements for infrastructure managers and railway undertakings	N/A	Withdrawn	It is the responsibility of the infrastructure manager to decide the best method to carry out any risk assessments by using their own policies or procedures.	1
G2.1.8 Joint requirements for infrastructure managers and railway undertakings	G2.5.3 Review and update site-specific plans	Converted to rationale	Converted to rationale to describe why there is a need to review site-specific plans.	1

From GE/GN8540 Issue 2	To RIS-8040-TOM Issue 2	Way forward	Comments	Objective
G2.1.9 Joint requirements for infrastructure managers and railway undertakings	N/A	Withdrawn	It is the responsibility of the infrastructure manager to decide the best method to carry out any risk assessments by using their own policies or procedures.	1
G2.1.10 Joint requirements for infrastructure managers and railway undertakings	G2.2.12 Development of site-specific plans to manage low adhesion at high-risk sites	Revised	Revised to give clear guidance that plans developed rely on collaboration to discuss and verify plans before implementation.	1
G2.1.11 Joint requirements for infrastructure managers and railway undertakings	Part 1, 1.1.4. G2.5.7 Appendix A A1.3 Appendix A A1.4 Appendix B B.2 Appendix B B.3	Revised	Reference to industry groups included in Part 1, 1.1.4. Included reference to research carried out by groups with up-to-date information.	1
G2.1.12 Joint requirements for infrastructure managers and railway undertakings	G2.2.12 Development of site-specific plans to manage low adhesion at high-risk sites	Revised	Revised to include reference to good practice to maintain an ongoing collaboration.	1
G2.1.13 Establishing site specific action plans	N/A	Withdrawn	It is the responsibility of the infrastructure manager to decide the best method to carry out any risk assessments by using their own policies or procedures.	1
G2.1.14 Establishing site specific action plans	N/A	Withdrawn	It is the responsibility of the infrastructure manager to decide the best method to carry out any risk assessments by using their own policies or procedures.	1

From GE/GN8540 Issue 2	To RIS-8040-TOM Issue 2	Way forward	Comments	Objective
G2.1.15 Establishing site specific action plans	Appendix A A1.1 Content of site-specific plans	Revised	Revised as a list of measures that can be included in a site-specific plan.	1
G2.1.16 Establishing site specific action plans	N/A	Withdrawn	Reads as a requirement in the original guidance note. The infrastructure manager will be leading the development of the plans and therefore retain them.	1
G2.1.17 Establishing site specific action plans	G2.1.3 Identifying high-risk sites for low adhesion	Converted to rationale	Better suited as rationale to support the requirement to identify high-risk site and the effective use of resources.	1
G2.1.18 Establishing site specific action plans	G2.2.7 Development of site-specific plans to manage low adhesion at high-risk sites	Revised	Revised in a list of factors to determine any risk of failure or damage to when developing plans.	1
G2.1.19 Establishing site specific action plans	G2.5.3 Review and update site-specific plans	Revised	Revised in a list of when it is good practice to review site specific plans.	1
G2.1.20 Establishing site specific action plans	Appendix A A3.1 Content of site-specific plans	Revised	Revised as a list of potential hazards that can be included in a site-specific plan.	1
G2.1.21 Establishing site specific action plans	Appendix A A1.1 Content of site-specific plans	Revised	Revised as a list of measures that can be included in a site-specific plan.	1
G2.1.22 Establishing site specific action plans	Appendix B B.4 Sharing seasonal information with drivers	Revised	Revised as a list of training, policies and competence material that is good practice for railway undertakings to review and amend.	1

From GE/GN8540 Issue 2	To RIS-8040-TOM Issue 2	Way forward	Comments	Objective
G2.1.23 Establishing site specific action plans	Appendix B B.4 Sharing seasonal information with drivers	Revised	Revised as a list of training, policies and competence material that is good practice for railway undertakings to review and amend.	1
G2.1.24 Establishing site specific action plans	Appendix A A5.1 Content of site-specific plans	Revised	Revised as a list of other information that can be included in a site-specific plan.	1
G2.1.25 Establishing site specific action plans	Appendix A A1.1 Content of site-specific plans	Revised	Revised as a list of measures that can be included in a site-specific plan.	1
G2.1.26 Establishing site specific action plans	Appendix A A1.1 Content of site-specific plans	Revised	Revised as a list of measures that can be included in a site-specific plan.	1
G2.1.27 Establishing site specific action plans	G2.4.4 Monitoring site-specific plans	Revised	Revised as good practice to examine wheels for contamination after incidents.	1
G2.1.28 Establishing site specific action plans	Appendix B B1 Appendix B B.4 Sharing seasonal information with drivers	Revised	Revised as a list of training, policies and competence material that is good practice for railway undertakings to review and amend. Revised as good practice to share seasonal information with drivers.	1
G2.1.29 Establishing site specific action plans	G2.2.6 Development of site-specific plans to manage low adhesion at high-risk sites	Redrafted	Redrafted as guidance for providing additional control measures where rolling stock is not fitted with systems to improve braking performance in developing plans.	1

From GE/GN8540 Issue 2	To RIS-8040-TOM Issue 2	Way forward	Comments	Objective
G2.1.30 Establishing site specific action plans	G2.2.7 Development of site-specific plans to manage low adhesion at high-risk sites	Revised	Revised and included within guidance to determine if measures included in the development of plans could have implications for testing.	1
G2.1.31 Establishing site specific action plans	G2.2.7 Development of site-specific plans to manage low adhesion at high-risk sites	Revised	Revised and included within guidance to determine if measures included in the development of plans could have implications for train detection systems.	1
G2.1.32 Review of site specific action plans	G2.5.4 Review and update site-specific plans	Revised	Revised to describe that reviewing site-specific plans can be supported by driver feedback.	1
G2.1.33 Review of site specific action plans	G2.5.3 Review and update site-specific plans	Revised	Revised in a list of when it is good practice to review site specific plans.	1
G2.1.34 Review of site specific action plans	G2.5.3 Review and update site-specific plans	Revised	Revised in a list of when it is good practice to review site specific plans.	1
G2.1.35 Review of site specific action plans	G2.5.3 Review and update site-specific plans	Revised	Revised in a list of when it is good practice to review site specific plans.	1
G2.1.36 Review of site specific action plans	G2.5.4 Review and update site-specific plans	Revised	Revised to remove reference to risk-assessment and replaced with how a site-specific plan can be supported.	1

From GE/GN8540 Issue 2	To RIS-8040-TOM Issue 2	Way forward	Comments	Objective
G2.1.37 Review of site specific action plans	G2.5.3 Review and update site-specific plans	Revised	Revised in a list of when it is good practice to review site specific plans.	1
G2.1.38 Review of site specific action plans	N/A	Withdrawn	It is the responsibility of the infrastructure manager to decide the best method to carry out any risk assessments by using their own policies or procedures.	1
G2.1.39 Review of site specific action plans	G2.5.4 Review and update site-specific plans	Revised	Revised to describe that reviewing site-specific plans can be supported by driver feedback.	1
G2.1.40 Review of site specific action plans	N/A	Withdrawn	There is a list of information that can be included in collaborative meetings within the document. This clause has no relevance.	1
G2.2.1 Requirements for infrastructure managers	Appendix A A1.1 Content of site-specific plans	Revised	Revised as a list of measures that can be included in a site-specific plan.	1
G2.2.2 Requirements for infrastructure managers	Appendix A A3.1 Content of site-specific plans	Revised	Revised as a list of potential hazards that can be included in a site-specific plan.	1
G2.2.3 Requirements for infrastructure managers	N/A	Withdrawn	It is the responsibility of the infrastructure manager to decide the best method to carry out any risk assessments by using their own policies or procedures.	1
G2.2.4 Requirements for infrastructure managers	G2.2.10 Development of site-specific plans to manage low adhesion at high-risk sites	Revised	Revised as a list of knowledge that is helpful for developing plans.	1

From GE/GN8540 Issue 2	To RIS-8040-TOM Issue 2	Way forward	Comments	Objective
G2.2.5 Requirements for infrastructure managers	N/A	Withdrawn	It is the responsibility of the infrastructure manager to decide the best method to carry out any risk assessments by using their own policies or procedures.	1
G2.2.6 Requirements for infrastructure managers	N/A	Withdrawn	It is the responsibility of the infrastructure manager to decide the best method to carry out any risk assessments by using their own policies or procedures.	1
G2.2.7 Requirements for infrastructure managers	Appendix A A1.1 Content of site-specific plans	Revised	Revised as a list of measures that can be included in a site-specific plan.	1
G2.2.8 Requirements for infrastructure managers	2.3.3 Implementing site-specific plans	Revised	It is a requirement for the infrastructure manager to inform the railway undertakings of remedial action taken and then to inform of their effectiveness when rail adhesion has become reportable at a location that does not have a site-specific plan.	1
G2.2.9 Requirements for infrastructure managers	G2.1.5 Identifying high-risk sites for low adhesion G2.5.3 Review and update site- specific plans	Revised	Revised in a list on how infrastructure managers can identify high-risk sites. Revised in a list describing for site-specific plans to be reviewed after two or more reports of low adhesion.	1
G2.2.10 Requirements for infrastructure managers	2.3.3 Implementing site-specific plans	Converted to requirement	This guidance currently reads as a requirement, reworded as a requirement to inform railway undertakings of action taken.	1

From GE/GN8540 Issue 2	To RIS-8040-TOM Issue 2	Way forward	Comments	Objective
G2.2.11 Requirements for infrastructure managers	G2.3.7 Implementing site-specific plans Appendix B B.1 Sharing seasonal information with drivers	Revised	Revised as guidance in implementing site-specific plans that adhesion conditions can be shared with driver. Revised as good practice guidance on how to share information with drivers.	1
G2.2.12 Requirements for infrastructure managers	G2.3.8 Implementing site-specific plans	Revised	Revised to include that rule book GERT8000-TW1 sets out the rules for signallers and drivers when rail adhesion is reportable.	1
G2.2.13 Requirements for infrastructure managers	G2.4.4 Monitor site-specific plans.	Revised	Revised as good practice to examine wheels for contamination after incidents.	1
G2.2.14 Requirements for infrastructure managers	N/A	Withdrawn	Statement that no guidance is provided. Not required in new document.	1
G2.2.15 Requirements for infrastructure managers	N/A	Withdrawn	This clause is no longer relevant as feedback from industry is that site assessments are subjective and that data from incidents is more reliable. The document gives clear guidance on how to identify high-risk sites, develop, implement, monitor and review site-specific plans .	1
G2.2.16 Requirements for infrastructure managers	2.3.1 Implementing site-specific plans	Converted to a requirement	Converted to a requirement to give clarity to the infrastructure manager on when implementing a plan is required.	1
G2.2.17 Requirements for infrastructure managers	G2.5.3 Review and update site- specific plans	Revised	Currently reads as a requirement, revised as good practice guidance for when to carry out a review and update of site-specific plans.	1

From GE/GN8540 Issue 2	To RIS-8040-TOM Issue 2	Way forward	Comments	Objective
G2.2.18 Requirements for infrastructure managers	2.3.3 Implementing site-specific plans	Converted to a requirement.	It is a requirement for the infrastructure manager to inform the railway undertakings of remedial action taken and then to inform of their effectiveness when rail adhesion has become reportable at a location that does not have a site-specific plan.	1
G2.3.1 Requirements for railway undertakings	G2.3.8 Implementing site-specific plans	Revised	Revised to include that rule book GERT8000-TW1 sets out the rules for signallers and drivers when rail adhesion is reportable.	1
G2.3.2 Requirements for railway undertakings	N/A	Withdrawn	Statement that no guidance is provided. Not required in new document.	1
N/A	Appendix A Content of site-specific plans	New	There was a lot of guidance for the content of site-specific plans. The new appendix was added to make this easier to read.	1
N/A	Appendix B Sharing seasonal information with drivers	New	Guidance from the previous document did not fit in the new RIS-8040-TOM which is about developing site-specific plans to manage the risk of low adhesion at high-risk sites. The new section was added to reflect the importance of the role drivers have in managing the risk of low adhesion.	1