

Design Manual for Roads and Bridges



General Principles and Scheme Governance
General information

GG 115

Requirements for works on the hard shoulder and road side verges on high speed dual carriageways

(formerly IAN 115/08 revision 2)

Revision 0

Summary

This document contains the requirements for works on the hard shoulder and road side verges on high speed dual carriageways.

Application by Overseeing Organisations

Any specific requirements for Overseeing Organisations alternative or supplementary to those given in this document are given in National Application Annexes to this document.

Feedback and Enquiries

Users of this document are encouraged to raise any enquiries and/or provide feedback on the content and usage of this document to the dedicated Highways England team. The email address for all enquiries and feedback is: Standards_Enquiries@highwaysengland.co.uk

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Contents

Release notes	2
Foreword	3
Publishing information	3
Contractual and legal considerations	3
Introduction	4
Background	4
Assumptions made in the preparation of this document	4
1. Scope	5
Aspects covered	5
Implementation	5
Use of GG 101	5
2. Normative references	6

Release notes

Version	Date	Details of amendments
0	Mar 2020	GG 115 replaces IAN 115/08 revision 2. This full document has been re-written to make it compliant with the new Highways England drafting rules.

Foreword

Publishing information

This document is published by Highways England.

This document supersedes IAN 115/08 revision 2, which is withdrawn.

Contractual and legal considerations

This document forms part of the works specification. It does not purport to include all the necessary provisions of a contract. Users are responsible for applying all appropriate documents applicable to their contract.

Introduction

Background

This document contains requirements and information relating to works on the hard shoulder and road side verges on high speed dual carriageways.

Assumptions made in the preparation of this document

The assumptions made in GG 101 [Ref 1.N] apply to this document.

1. Scope

Aspects covered

- 1.1 The national requirements for works on the hard shoulder and road side verges on high speed dual carriageways set out in the National Application Annexes shall be followed.

Implementation

- 1.2 This document shall be implemented on all schemes involving works on the hard shoulder and road side verges on high speed dual carriageways on the Overseeing Organisations' motorway and all-purpose trunk roads according to the implementation requirements of GG 101 [Ref 1.N].

Use of GG 101

- 1.3 The requirements contained in GG 101 [Ref 1.N] shall be followed in respect of activities covered by this document.

2. Normative references

The following documents, in whole or in part, are normative references for this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

Ref 1.N	Highways England. GG 101, 'Introduction to the Design Manual for Roads and Bridges'
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General Principles and Scheme Governance
General information

GG 115

England National Application Annex to GG 115 Requirements for works on the hard shoulder and road side verges on high speed dual carriageways

(formerly IAN 115/08 revision 2)

Revision 0

Summary

This National Application Annex contains the Highways England specific requirements related to works on the hard shoulder and road side verges on high speed dual carriageways.

Feedback and Enquiries

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Contents

Release notes	2
Foreword	3
Publishing information	3
Contractual and legal considerations	3
Introduction	4
Background	4
Assumptions made in the preparation of this document	4
Abbreviations	5
Terms and definitions	6
E/1. Planning issues	8
E/2. Vehicle issues	9
E/3. Personnel issues	10
E/4. Traffic management	11
E/5. Normative references	15
E/6. Informative references	16

Release notes

Version	Date	Details of amendments
0	Mar 2020	Highways England National Application Annex to GG 115.

Foreword

Publishing information

This document is published by Highways England.

This document supersedes IAN 115/08 revision 2, which is withdrawn.

Contractual and legal considerations

This document forms part of the works specification. It does not purport to include all the necessary provisions of a contract. Users are responsible for applying all appropriate documents applicable to their contract.

Introduction

Background

This document contains requirements and information relating to safe methods of working for any activity undertaken on the hard shoulders and road side verges on high speed dual carriageways. It should be read in conjunction with the Traffic Signs Manual: Chapter 8 (TSM Chapter 8 [Ref 5.N]), the principles of which should be applied.

This document relates primarily to high speed dual carriageways, but can equally be transferred to high speed single carriageways and lower speed roads where similar principles may be applied.

Assumptions made in the preparation of this document

The assumptions made in GG 101 [Ref 3.N] apply to this document.

Abbreviations

Abbreviations

Abbreviation	Definition
ALARP	As low as reasonably practicable
EA	Emergency area
LBS1	Lane below signal 1

Terms and definitions

Terms

Term	Definition
Competence	A person with the appropriate level of knowledge, training, experience and skill to make risk based decisions on the chosen subject matter.
Emergency area	On smart motorways, an area to the side of the carriageway where drivers can stop in an emergency and in which maintenance vehicles can stop when carrying out work in the vicinity of the emergency area.
Hard shoulder	The hard shoulder is the lane clear of main line traffic provided adjacent to the nearside of a dual carriageway road that offers a place for vehicles to stop in emergencies and in which authorised vehicles can be parked during routine maintenance operations.
High speed dual carriageway	A dual carriageway road which is subject to a permanent speed limit of 50mph or more.
Lane below signal 1	On smart motorways - hard shoulder running, the lane on the nearside (left) of the carriageway adjacent to the verge, equivalent to the hard shoulder on a conventional motorway. NOTE: Lane below signal 1 can be either subject to controlled use as a running lane (hard shoulder running) or be permanently converted to a running lane (all lane running).
Lateral clearance	The lateral clearance is the distance measured horizontally between the edge of the working space or vehicle and the edge of the carriageway in use by main line traffic, as defined by the Traffic Signs Manual Chapter 8 (TSM Chapter 8 [Ref 5.N]).
Live lane	A traffic lane that does not form part of the works area or safety zone. Unless signing advises to the contrary, the hard shoulder is not classified as a live lane.
Maintenance hardstanding / Maintenance access area	A designated area for maintenance activity, usually consisting of a section of verge that has been reinforced to provide a location off the carriageway/hard shoulder in which authorised vehicles can be parked during maintenance operations.
Personnel	Any person under the direction and control of those responsible for undertaking work activities on the road network.
Short, medium and long duration stops on the hard shoulder	The following definitions apply to any work activity that requires a vehicle to stop at the side of a high-speed road: 1) short duration; up to 15 minutes; 2) medium duration; up to 90 minutes; 3) long duration; over 90 minutes.
Smart motorway - all lane running	A smart motorway (formerly known as managed motorway) incorporating permanent conversion of the hard shoulder to a running lane, whilst retaining the ability to dynamically control traffic.

Terms (continued)

Term	Definition
Smart motorway - hard shoulder running	A smart motorway (formerly known as managed motorway) incorporating hard shoulder running (i.e. incorporating the operational regime of controlled use of the hard shoulder during times of heavy congestion or incident management).
Verge	The verge is the area situated between the earth works slope or highway boundary and either the back of the hard shoulder or the edge of the carriageway.

E/1. Planning issues

- E/1.1 Before carrying out any work, all risks associated with the work activity shall be assessed and used to select a method of work that results in risk that is ALARP for all parties affected.
- E/1.2 A suitable and sufficient risk assessment must be undertaken and appropriately documented by a competent person, who is responsible for planning and carrying out the work in accordance with Health and Safety at Work Act HASAWA 1974 c.37 [Ref 1.N] & Management of Health and Safety at Work Regulations MHSWR 1999, Section 3 [Ref 4.N].
- NOTE For the purpose of this document, 'suitable and sufficient risk assessment' is defined within GG 104 [Ref 1.I], which sets out the framework and approach for safety risk assessment to be applied when undertaking any activity that does, or can have, an impact on safety on Highways England's motorway and all-purpose trunk roads, either directly or indirectly.*
- E/1.3 An assessment shall be made to determine whether the site or location can be accessed safely without the need to stop on the hard shoulder or verge, thus eliminating the risk associated with stopping.
- E/1.4 Where the need to stop on the hard shoulder or verge cannot be eliminated, the assessment shall determine:
- 1) how risk can be reduced;
 - 2) whether workers can be isolated from risk of harm; and if not,
 - 3) how risk can be controlled.
- E/1.4.1 When undertaking work on the hard shoulder or roadside verge, vehicles should be parked off the carriageway completely on the verge whenever possible, if there is an appropriate route for the vehicle to access a suitable parking location safely without causing infrastructure or environmental damage.
- E/1.4.2 Where vehicles cannot be parked off the carriageway, they should be parked on the hard shoulder or at the side of the road, as far from live traffic as possible, in such a way to maximise the lateral clearance between the vehicle and the trafficked carriageway, provided this can be achieved without causing infrastructure or environmental damage.
- E/1.5 The principles within the Traffic Signs Manual (TSM Chapter 8 [Ref 5.N]) shall be applied in respect of the safety zone or minimum lateral clearance required when working on the hard shoulder or verge.
- E/1.5.1 A clearance of not less than 1.5m from the side of a vehicle to the edge of the trafficked carriageway (representing a 0.3m access zone adjacent to the vehicle plus the required 1.2m minimum lateral clearance between personnel and the nearest live lane) should be maintained when parked on the hard shoulder or verge, in order to minimise the risk of impact from passing traffic.
- E/1.5.2 An absolute minimum lateral clearance of 0.5m should be maintained between the nearest part of the parked vehicle and edge of the trafficked carriageway in order to minimise the risk of impact from passing traffic.
- E/1.5.3 Where a safe lateral clearance cannot be achieved, other traffic management measures should be assessed for their suitability and implemented accordingly.
- E/1.5.4 For long duration stops on the hard shoulder, the closure of the hard shoulder (and where appropriate the adjacent traffic lane) should be carried out in accordance with the guidance given in TSM Chapter 8 [Ref 5.N].
- E/1.6 Information that helps to ensure the safety of those involved with the activity shall be provided to the persons undertaking the works prior to commencement of the works.

E/2. Vehicle issues

- E/2.1 In terms of conspicuity and lighting requirements, any vehicle undertaking short, medium or long duration stops shall comply with the vehicle specifications given in the Traffic Signs Manual (TSM Chapter 8 [Ref 5.N]).
- E/2.1.1 Subject to suitable site-specific risk assessment, when work activity is being undertaken on the hard shoulder vehicles should be parked at least 18m but no more than 50m upstream of the works area.
- E/2.1.2 When works are being carried out off the hard shoulder, but site conditions require vehicles to be parked on the hard shoulder, vehicles should be parked at least 3m downstream of a point adjacent to the location of personnel off the carriageway.
- E/2.1.3 Vehicles should not be positioned so they are facing oncoming traffic when on the hard shoulder.
- E/2.1.4 Beacons should be used in accordance with the following conditions:
- 1) when entering, leaving or moving on the hard shoulder or verge;
 - 2) when travelling in traffic at a speed significantly less than the general speed of the traffic;
 - 3) when approaching or leaving the site;
 - 4) for all short duration stops and remain on at all times unless the vehicle is parked completely off the carriageway;
 - 5) for medium duration stops where no traffic management is required, remain on at all times unless the vehicle is parked off the carriageway completely on the verge;
 - 6) where traffic management to Figure E/4.1.10Na or Figure E/4.1.10b is required, switched off once the traffic management is in place;
 - 7) for all long duration stops, switched off when the vehicle is stationary.
- E/2.1.5 Vehicle conspicuity and lighting should be maintained in good condition always by:
- 1) placing retro reflective tape on rear facing edges;
 - 2) duplication of lighting clusters and beacons where standard lighting is obscured;
 - 3) ensuring the cleanliness of conspicuity markings and lights.
- E/2.2 The number of vehicles stopping/attending the site or location shall be kept to a minimum.
- E/2.2.1 Placement of vehicles in the hard shoulder or verge should avoid restricting the sight-lines of passing vehicles.

E/3. Personnel issues

- E/3.1 When working on the verge or hard shoulder, the risks to the personnel undertaking the work shall be reduced to a level that is ALARP.
- E/3.1.1 Personnel should be fit and suitable for the work required and not impaired by the effects of ill health, drugs or alcohol.
- E/3.1.2 Personnel should wear high visibility clothing to BS EN ISO 20471 [Ref 2.N] Class 3 and any other PPE as defined in the risk assessment at E/1.2.
- E/3.1.3 Work activities should be organised such that personnel face oncoming traffic where possible.
- E/3.1.4 The loading and unloading of tools and equipment should not be undertaken from the live traffic side of a vehicle.
- E/3.2 Where work activities cannot be performed while facing oncoming traffic, alternative risk control measures shall be implemented and identified in the risk assessment referred to in E/1.2.
- E/3.3 Where it is not possible to load and unload tools and equipment in any other means than from the live traffic side of a vehicle, alternative risk control measures shall be implemented and identified in the risk assessment referred to in E/1.2.
- E/3.4 Personnel who install or remove medium duration stop traffic management to Figure E/4.1.10a and Figure E/4.1.10b shall be competent persons who possess the appropriate level of knowledge, training, experience and skill to make risk based decisions on the chosen subject matter.

E/4. Traffic management

- E/4.1 When working on the verge or hard shoulder, the provision of traffic management shall be assessed as part of the risk assessment process in E/1.2 to ensure appropriate traffic management arrangements are used for the work.
- E/4.1.1 Where personnel are working on the hard shoulder, traffic management should be provided in accordance with Table E/4.1.3a.
- E/4.1.2 Where there are no personnel working on the hard shoulder, traffic management should be provided in accordance with Table E/4.1.3b.
- E/4.1.3 Tables E/4.1.3a and E/4.1.3b should not be used as checklists from which actions can simply be selected and are intended to demonstrate the change in risk level associated with working in different locations on the hard shoulder or verge, as well as presenting possible measures that could be taken to manage these risks.

Table E/4.1.3a Work activity on the hard shoulder

Risk mitigation hierarchy	Stop duration		
	Short	Medium	Long
Vehicle stopped on the carriageway, completely on the verge	None (see E/4.1.3)	Figure E/4.1.10b	Closure TSM Chapter 8 [Ref 5.N]
Vehicle stopped on the hard shoulder, lateral clearance > 1.5m	None	Figure E/4.1.10a	Closure TSM Chapter 8 [Ref 5.N]
Vehicle stopped on the hard shoulder, lateral clearance > 0.5m	None	Figure E/4.1.10a	Closure TSM Chapter 8 [Ref 5.N]
Vehicle stopped on the hard shoulder, lateral clearance < 0.5m	E/4.1.4	Chapter 8 closure TSM Chapter 8 [Ref 5.N]	Closure TSM Chapter 8 [Ref 5.N]

Table E/4.1.3b Work activity on the verge

Risk mitigation hierarchy	Stop duration		
	Short	Medium	Long
Vehicle stopped on the carriageway, completely on the verge	None	None (see E/4.1.5)	Figure E/4.1.10b
Vehicle stopped on the hard shoulder, lateral clearance > 1.5m	None	None (see E/4.1.5)	Hard shoulder closure TSM Chapter 8 [Ref 5.N]
Vehicle stopped on the hard shoulder, lateral clearance > 0.5m	None	None (see E/4.1.5)	Hard shoulder closure TSM Chapter 8 [Ref 5.N]
Vehicle stopped on the hard shoulder, lateral clearance < 0.5m	E/4.1.4	Chapter 8 closure TSM Chapter 8 [Ref 5.N]	Hard shoulder closure TSM Chapter 8 [Ref 5.N]

NOTE *Where the works vehicle is parked a long distance away from the work location, the provision of sufficient advance warning of the presence of road works and personnel on the hard shoulder is compromised.*

- E/4.1.4 In situations where the provision of sufficient advance warning of the presence of road works and personnel on the hard shoulder is compromised, the risk assessment should demonstrate that the risks associated with providing alternative forms of advance warning are identified and mitigated in the risk assessment.
- E/4.1.5 Where the risk assessment indicates the requirement to provide an alternative form of advance warning, the provision of traffic management as shown in Figure E/4.1.10b should be followed.
- E/4.1.6 Whenever possible, vehicles should not stop on the hard shoulder where lateral clearances are less than 0.5m and personnel are working on the hard shoulder or verge adjacent to or downstream of the vehicle.
- E/4.1.7 Where personnel are working on the hard shoulder or verge and the lateral clearance is less than 0.5m, any assessment should assess the risks associated with stopping the vehicle at a place downstream of the work location where a clearance greater than 0.5m can be achieved.
- E/4.1.8 Where personnel are working on the carriageway and the works vehicle is parked a long distance downstream from the work location, the risk assessment should assess the risks associated with the reduced level of advanced warning provided by the works vehicle and provide mitigation as per E/4.1.4 above.
- E/4.1.9 If the vehicle cannot be positioned in such a way that a lateral clearance greater than 0.5m can be achieved or is possible, a risk assessment should be carried out to determine whether a Chapter 8 (TSM Chapter 8 [Ref 5.N]) closure of the hard shoulder and adjacent traffic lane is required.
- E/4.1.10 Any risk assessment should demonstrate that the risks associated with using appropriate traffic management shown in Figure E/4.1.10a or Figure E/4.1.10b, have been identified, and have been subject to an assessment of site location and conditions.

Figure E/4.1.10a Medium duration stops on motorways and high speed roads with hard shoulders

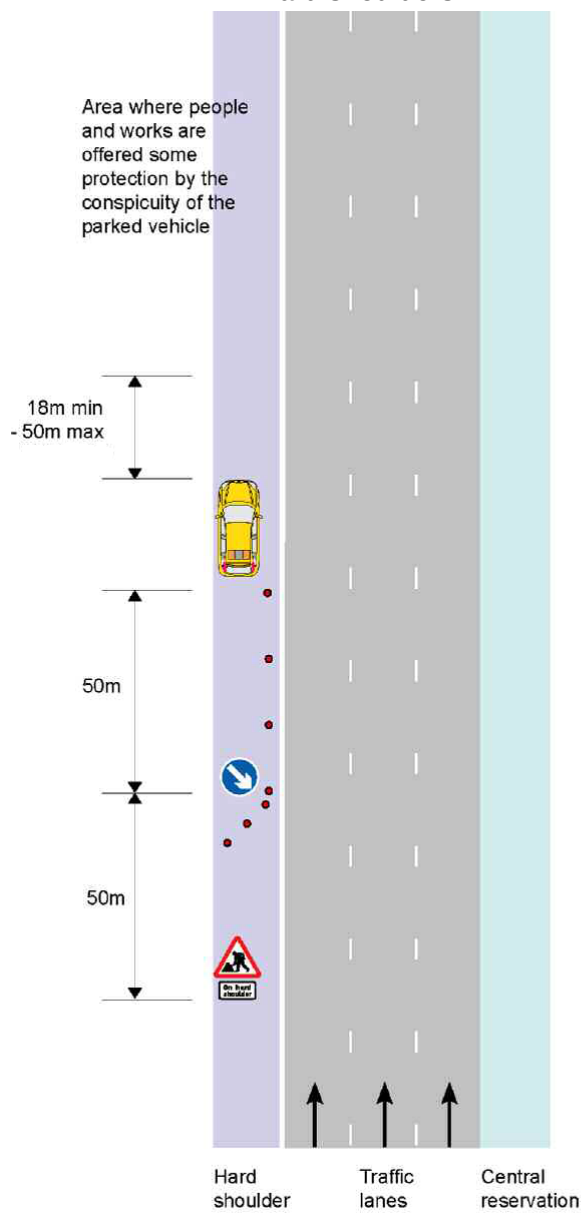
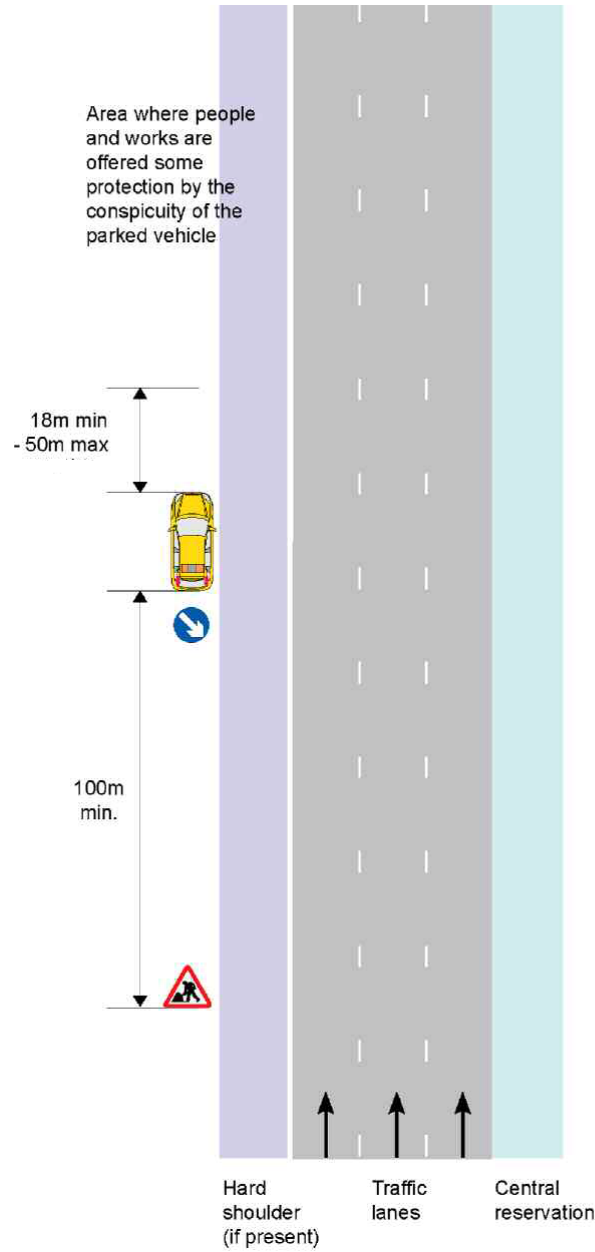


Figure E/4.1.10b Verge working on motorways and high speed roads with or without hard shoulders



NOTE 1 The distance of 18m min - 50m max is determined by a site specific risk assessment.

NOTE 2 Sign and cone size as recommended in TSM Chapter 8 [Ref 5.N].

NOTE 3 Longitudinal cone spacing 18m.

NOTE 4 Minimum sign height 750mm.

E/4.1.11 All temporary traffic management equipment should be clean and fit for the purpose when deployed and is regularly maintained in such condition until completion of the work in line with TSM Chapter 8 [Ref 5.N] guidance.

E/5. Normative references

The following documents, in whole or in part, are normative references for this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

Ref 1.N	The National Archives. legislation.gov.uk. HASAWA 1974 c.37, 'Health and Safety at Work etc. Act 1974'
Ref 2.N	BSI. BS EN ISO 20471, 'High visibility clothing. Test methods and requirements'
Ref 3.N	Highways England. GG 101, 'Introduction to the Design Manual for Roads and Bridges'
Ref 4.N	Legislation.gov.uk. MHSWR 1999, Section 3, 'The Management of Health and Safety at Work Regulations 1999, Section 3'
Ref 5.N	TSO. Department for Transport. TSM Chapter 8, 'Traffic Signs Manual Chapter 8 - Road works and temporary situations'

E/6. Informative references

The following documents are informative references for this document and provide supporting information.

Ref 1.1	Highways England. GG 104, 'Requirements for safety risk assessment'
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General Principles and Scheme Governance
General information

GG 115

Northern Ireland National Application Annex to GG 115 Requirements for works on the hard shoulder and road side verges on high speed dual carriageways

(formerly IAN 115/08 revision 2)

Revision 0

Summary

There are no specific requirements for Department for Infrastructure, Northern Ireland supplementary or alternative to those given in GG 115.

Feedback and Enquiries

Users of this document are encouraged to raise any enquiries and/or provide feedback on the content and usage of this document to the dedicated team in the Department for Infrastructure, Northern Ireland. The email address for all enquiries and feedback is: dcu@infrastructure-ni.gov.uk

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2

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General Principles and Scheme Governance
General information

GG 115

Scotland National Application Annex to GG 115 Requirements for works on the hard shoulder and road side verges on high speed dual carriageways

(formerly IAN 115/08 revision 2)

Revision 0

Summary

There are no specific requirements for Transport Scotland supplementary or alternative to those given in GG 115.

Feedback and Enquiries

Users of this document are encouraged to raise any enquiries and/or provide feedback on the content and usage of this document to the dedicated Transport Scotland team. The email address for all enquiries and feedback is: TSSStandardsBranch@transport.gov.scot

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Llywodraeth Cymru
Welsh Government

General Principles and Scheme Governance
General information

GG 115

Wales National Application Annex to GG 115 Requirements for works on the hard shoulder and road side verges on high speed dual carriageways

(formerly IAN 115/08 revision 2)

Revision 0

Summary

There are no specific requirements for Welsh Government supplementary or alternative to those given in GG 115.

Feedback and Enquiries

Users of this document are encouraged to raise any enquiries and/or provide feedback on the content and usage of this document to the dedicated Welsh Government team. The email address for all enquiries and feedback is: Standards_Feedback_and_Enquiries@gov.wales

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2

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