

The Specification for the Reinstatement of Openings in Highways – 4th Edition (England)

Coming into force as statutory guidance
on 10th May 2021

An Overview of the Key Changes for Managers and Supervisors

[Prepared by the HAUC (UK) SROH Working Party]

Presented as a HAUC (England) document



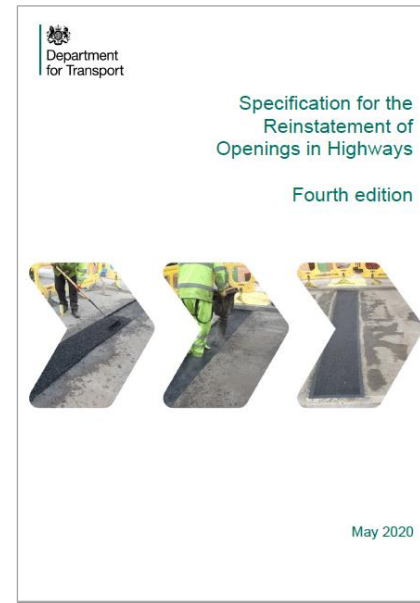
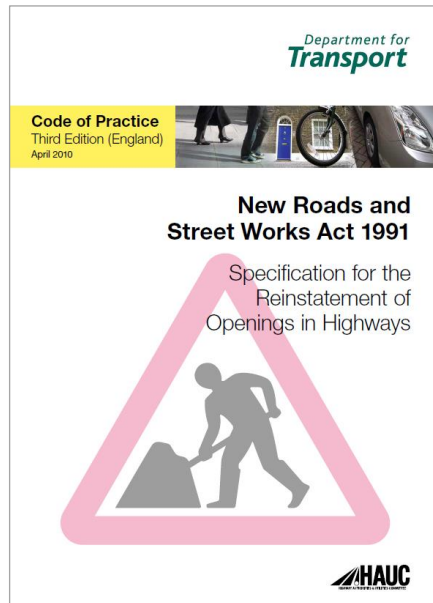
Why amend the SROH 3rd Edition?

The 3rd Edition came into effect in October 2010 – much had changed in the industry when the 4th Edition Review was initiated in 2015



Original DfT Consultation - Executive Summary:

“The 4th Edition is intended to address the ‘contentious and disputed’ issues while bringing the document up to date. The aim is to provide guidance that is less open to misinterpretation, a specification that is more open to innovation, and requirements that are achievable and verifiable.”



Agenda

A general review of the key changes and new additions set out in the SROH 4th Edition



1. S1 Reinstatement Guarantee - Operational Principles
2. S1 Narrow Trenches and Small Openings
3. S2 Works in deteriorated or distressed areas
4. S6.5 Restricted areas (incl. for small openings)
5. S6.6 Micro-trenching
6. S6.7 Large diameter cores
7. S6.8.8 Overbanding
8. S7 Rigid Roads
9. S10.2 Compaction testing for Bituminous Materials (Air Voids)
10. S11.5 Ironwork in roads, footways, footpaths and cycle tracks
11. A2 Wider pallet of available materials
12. A7.2 Composite Footways, footpaths and cycle tracks
13. A9 Alternative reinstatement materials and technologies
14. A9 Rationalising Innovation Process
15. A10 Additional Standard Materials
16. Reinstatement Guarantee – Current and Future
17. Appendices and Supplementary Information

The key changes here are not an exhaustive list of changes

Reinstatement Guarantee - Operational Principles

Sections S1.1 and S1.2 set out the general requirements in relation to the reinstatement



Text from SROH WP Advice Note [Reference No. 2017/SROH-002] was reviewed and text included to clarify the following points:

“S1.1 General

S1.1.4 If, at any time during a guarantee period, the reinstatement fails any relevant requirements in S2 of this Code, then the undertaker must carry out remedial action to restore it to a compliant condition. An interim reinstatement must normally be made permanent within six months.

S1.1.5 When it is discovered at any time that the reinstatement does not conform to a requirement in this Code, other than those detailed in S2, then remedial work must be assessed in accordance with S12. In this case the guarantee period will not commence until the remedial works have occurred.”

S12.1 – some key points:

“**S12.1.1** The undertaker is responsible for ensuring that reinstatements meet the required performance criteria throughout the guarantee period.

S12.1.2 When determining the exact scope of the remedial action for a noncompliant reinstatement, the quality of the reinstatement must be assessed relative to the condition of the adjacent structure. Other considerations are:

- (1) The long-term durability of the highway asset
- (2) The additional congestion that may be caused by the remedial work
- (3) The environmental impact
- (4) Public perception

Any agreement between both the authority and the works undertaker, including an agreement that no remedial works are required, should be recorded on the relevant street works notice or permit.”

Narrow Trenches and Small Openings

A new definition of narrow trenches is introduced. The definition of a small opening was reviewed and increases in area. S1.5.4 & S6.5 reinforce changes.



“Narrow Trench An opening over 60 mm and up to 300 mm wide and over 1 m long.”

“Small openings An excavation with a reinstatement surface area, excluding the apparatus surface area, up to 2m² in road types 0, 1 and 2 and up to 4m² in road types 3 and 4 and in footways, footpaths and cycle tracks, that is not a large diameter core, a micro trench or a narrow trench.”

“S1.5.4 Small openings – an excavation.....with a reinstatement surface area, excluding the apparatus surface area, up to:

- 1) 2m² in road types 0, 1 and 2; or
- 2) 4m² in road types 3 and 4 and in footways, footpaths and cycle tracks.”

“S6.5 **Small openings, narrow trenches and access chamber covers**

General

S6.5.1 A permanent surface course material in accordance with A2 may be laid in place of a permanent binder course material at base and/or binder course level:

- 1) in narrow trenches and small openings (as defined in S1.5.3 and S1.5.4);
and
- 2) within 350 mm of access chamber covers.”

NB use of permanent surface course material in place of permanent binder course material at binder course level in all footways remains unchanged – applies to any reinstatement dimension, save for micro-trenching. [[Appendix A7.2](#)]

Narrow Trenches and Small Openings

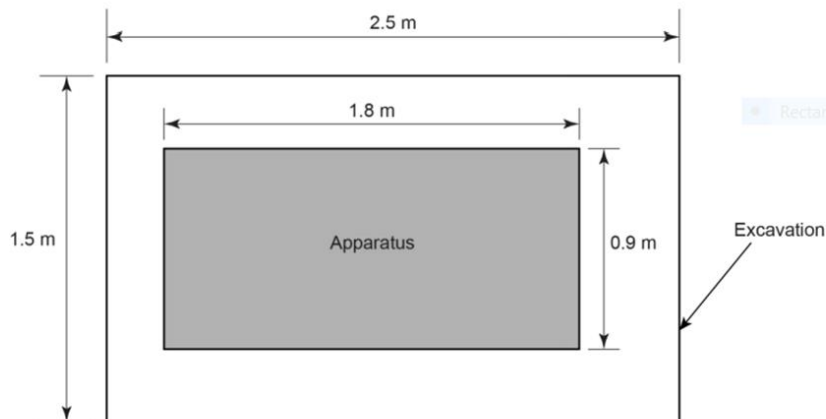
Further requirements are set out here.



Some key points:

- The new changes mean there is now the opportunity to reinstate only surface course material in place of binder course material in all works up to 4m².
- This particularly supports reduced duration and occupancy of carriageway works.

Figure NG1.1 Classifying an excavation where surface apparatus is present



In this example:

$$A = \text{Excavation surface area}^* = 2.5 \times 1.5 = 3.75 \text{ m}^2$$

$$B = \text{Apparatus surface area} = 1.8 \times 0.9 = 1.62 \text{ m}^2$$

$$C = \text{Reinstatement surface area}^{**} = A - B = 2.13 \text{ m}^2$$

* to be recorded in register

** to categorise excavations as per S1.5

Excavation categories: Small excavations in road types 3 and 4 and in footways, footpaths and cycle tracks; other openings in road types 0, 1 and 2.

- Single surface course material use is further widened by new options to use AC10 carriageway surface course materials in localised footway areas (when linked to carriageway works) [A2.3.6(2) and NGA2.13] [*]
- NG1.5 and Figure NG1.1 provide clarity and a sample calculation for Registration of reinstatement around ironwork, whilst confirming actual reinstatement area limits for small openings under S1.5.4.

[*] later Slide - Wider pallet of materials

Works in deteriorated or distressed areas

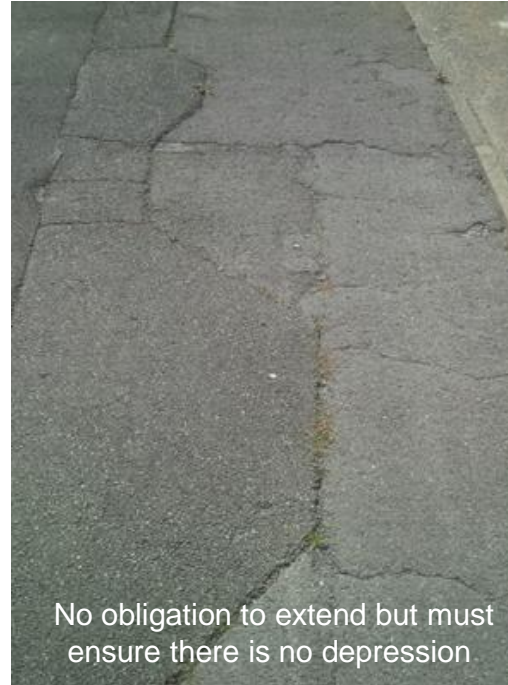
New Section S2.8 was developed in recognition that the conditions of existing carriageway and footway areas vary significantly



S2.8 – some key points:

- Undertaker's responsibility to evidence and factually record poor condition
- Undertaker to demonstrate works-risk management (to minimize further damage)
- HA 'might' agree to meet costs of reinstating increased areas [NG2.8]
- If no agreement, Undertaker is under no obligation to extend reinstatement, but must avoid creating a trip

Photos from **Figure NG2.3 – Examples of Surface Condition** (Additional comments added):



Restricted Areas

Additional compaction and material options provided at S6.5.3 include ability to use flowable materials such as Polymer Modified Mastic Asphalt (PMMA).



“Restricted area Small openings, openings less than 200 mm wide or other areas where conventional compaction equipment cannot be used effectively.”



Materials:

- Modified type 1F granular material for restricted areas
- PMMA added as an option around congested ironwork

PMMA options:

- For narrow and small openings PMMA can be used as bedding, backfill or surfacing material (but must meet the requirements of S2 and the details in the Product Acceptance Scheme Certificate). [S6.5.7 & S6.5.8]

Equipment

- PMMA (flowable) added as an option around congested ironwork
- Identified compaction equipment options [S6.5.3(1)] “width of the reinstatement is the width of the compaction tool sole plate plus a minimum of 30 mm.”

Alternative compaction plant for granular materials used in restricted areas [Table A8.1]:

- Vibrotamper (25kg min.): Minimum of 6 compaction passes
- Percussive Rammer (10kg min.): Maximum of 75 mm compacted lift thickness

See also
additional details
in Appendices

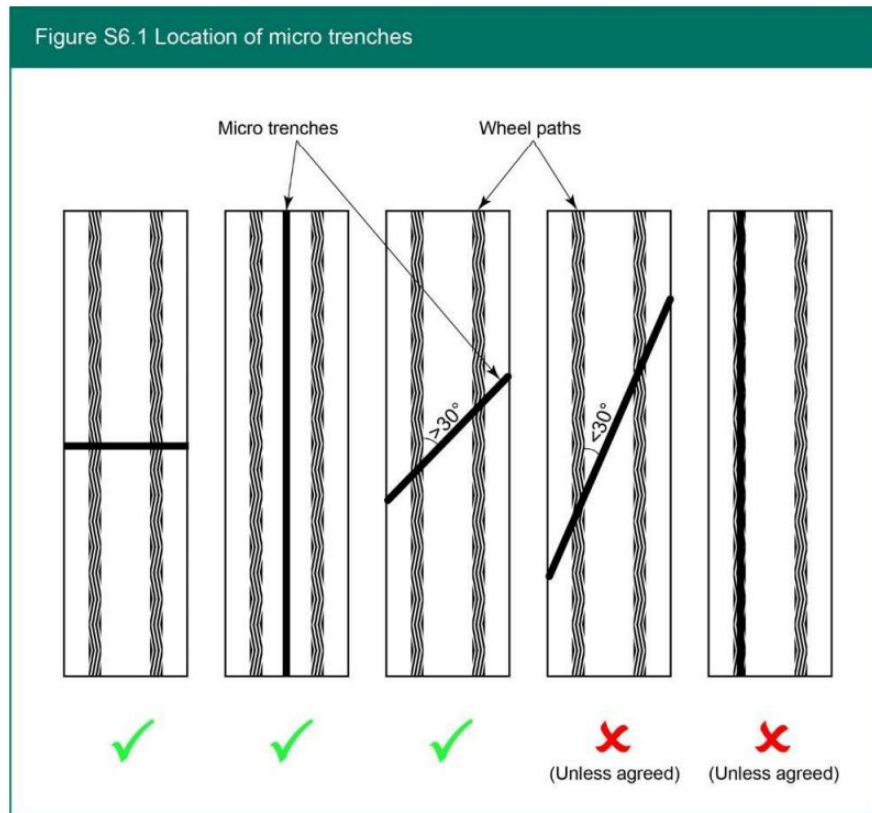
Micro trenching

At S.6.6, micro trenching is introduced substantially following the principles of the earlier HAUC Advice Note. There are additional specifications items.



“Definitions An opening up to 60 mm wide and over 1 m long.”

“S6.6.1 This section applies to micro trenching in flexible roads, footways, footpaths and cycle tracks (as per S8).”



S6.6 – some key points:

- Only carried out by agreement between undertaker and HA [S6.6.3]
- Agreement not unreasonably withheld: High Duty/Amenity, engineering [S6.6.3]
- Reinstatement material \approx per HAUC Advice Note (resin based)
- Duct/cable must have a tracer inserted to allow for easy locating [S6.6.12]
- Minimum depth of cover to apparatus - 100mm/175mm (FW/CW) [S6.6.16]
- Reinstatement materials must comply with A2.6 [S6.6.27]
- Rigid/composite carriageways or footways require A9 approval [S6.6.1]

Large diameter cores

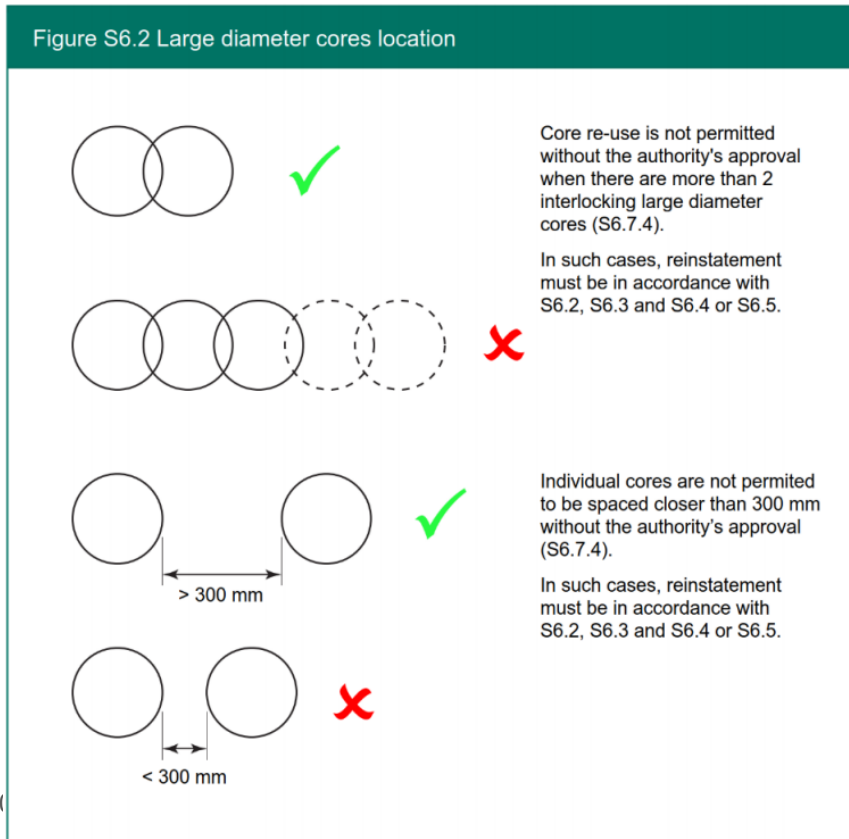
At S.6.7, large diameter coring is introduced. A draft (not published) SROH WP Advice Note was reviewed and additional specifications items added.



“Definitions A core over 150 mm in diameter.”

“S6.7.1a technique whereby a core....is cut out of the bound layers....in one piece and stored for re-use.... After work on the apparatus is complete, the unbound material is replaced and compacted, and the extracted core is re-fitted to the road in its original orientation and bonded to the surrounding surface.....”

Figure S6.2 Large diameter cores location



S6.7 – some key points:

- A maximum of 2 overlapping cores can be reinstated with re-used cores [S6.7.3]
- If not overlapped, a minimum of 300mm must exist between cores [S6.7.3]
- If 3 or more cores overlap, core re-use not permitted unless agreed by HA [S6.7.4]
- Multiple cores spaced less than 300mm, core re-use not permitted unless agreed by HA [S6.7.4]
- If not permitted, traditional reinstatement methods will need to be adopted [S6.7.4]

Large diameter cores

At S.6.7, large diameter coring is introduced. Further requirements are set out here.



S6.7 – some key points for the reinstatement:

- After core removal, if undermining of the adjoining structure occurs, core re-use is not permitted and traditional reinstatement must be carried [S6.7.11(2)]
- Above the sub-base layer, a layer of pea gravel not exceed 50mm thickness may be used to aid levelling of the core. [S6.7.15]

“S6.7.16 Suitability of extracted core for re-use

- 1) If the core is damaged, it cannot be re-used and the opening must be reinstated in accordance with S6.2, S6.3 and S6.4 or S6.5, as appropriate.
- 2) A core is unacceptable for re-use in the reinstatement where any of the following conditions exist:
 - a) It contains any vertical open cracks ≥ 3 mm wide when measured on the face of the core; or
 - b) Horizontal delamination is present in any layer in the core; or
 - c) The core is less than 100 mm deep.
- 3) If there is any doubt over core integrity, core re-use is not permitted and it must be reinstated in accordance with S6.2, S6.3 and S6.4 or S6.5, whichever are applicable.”

- S6.7.18 sets out requirements for recording large diameter cores, including reinstatement dimensions.

See also
additional details
in Appendices

Overbanding

At S6.8, requirements for the use of Overbanding are confirmed. [These have been moved (from S11.7 in the 3rd Edition) to sit under edge preparation.]



“6.8.8 Overbanding

- (1) Overbanding may be used in reinstatements, including remedial works (see S12.3.3) to improve durability. If overbanding is used, it must comply with the reinstatement guarantee period.
- (2) Overbanding must be at least 3 mm wide, no wider than 40 mm, and be no more than 3 mm thick at the surface.
- (3) The overbanding system must have a current certificate by a Product Acceptance Scheme. Alternative certification is required to confirm suitability of use of the overbanding product for its in-service use.
- (4) Hot or cold applied systems may be used, subject to the manufacturer’s recommendations.”
- “10) Overbanding must not be used as a substitute for edge sealing.”

Rigid Roads

S7 includes several new specification matters. Some are new requirements whilst others build on areas of concern in previous SROH editions.



S7.5 Edge support and preparation

- This section has been amended to allow the use of taper support or dowel bars depending on the road category or by agreement.
- Edge taper support options in Fig. S7.1 are broadly unchanged.
- Use of edge taper support only permitted in road types 3 & 4. [S7.5.1(1)]
- Use of taper support only in road type 2 – with prior HA agreement. [This was to set the optimum load transfer method for heavily trafficked carriageways as the default reinstatement method (i.e. using dowel bars). This may have limited technical benefit (versus time to install dowels) in evolved rigid type 2 carriageways; especially if deteriorated. In this scenario, it is anticipated that the new requirement for dowels can be removed by agreement, on the basis of lack of technical benefit versus reduced reinstatement time (linked to congestion).]

Dowel bar support

“S6.7.16 In narrow trenches and small openings.....the cut section of concrete may need to be widened to accommodate dowel bar installation or the holes may be drilled at an angle to allow the use of pre-shaped (angled) dowel bars. They must be drilled along the centreline of the exposed faces, to provide a sliding fit for 20 mm or 25 mm diameter steel dowel bars.”

Figure S7.1 Slab edge taper options

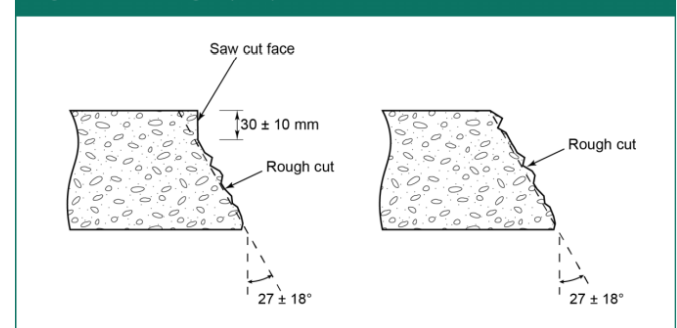
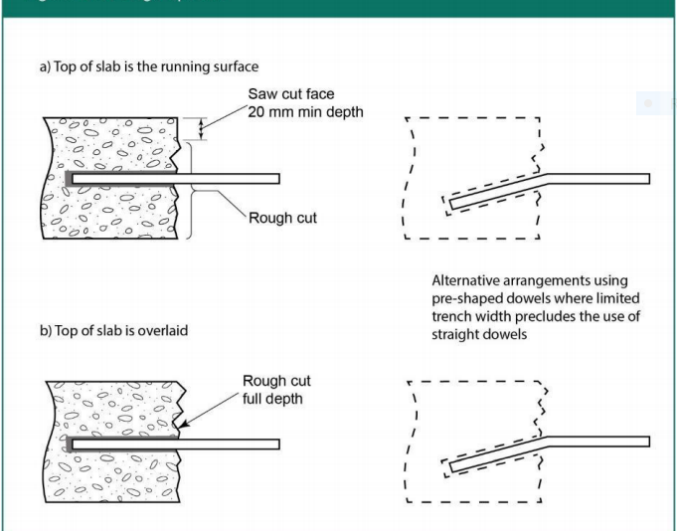


Figure S7.2 Edge options



Rigid Roads

Some of the additional reinforcement requirements are set out below.



“S7.6 Reinforcement”

“No reinforcement in existing concrete

- S7.6.1 If the existing concrete is unreinforced and the trench is more than 1.5 times longer than it is wide, or where the reinstatement covers more than one slab, the reinstated concrete must be reinforced to mitigate early life non-structural cracking.
- S7.6.2 In this case, the reinforcement must be placed in the upper part of the slab (with a minimum cover of 60 mm).
- S7.6.3 In all other cases, when the existing concrete has no reinforcement, no reinforcement is needed.”

“Reinforcement in existing concrete

- S7.6.4 If the existing concrete is reinforced, there is no need to replicate the existing reinforcement if:
 - 1) the only reinforcement in the existing reinforced slab is within the upper 90 mm (measured to the top of the reinforcement from the top of the slab), and
 - 2) the reinforcement is a mesh with a diameter of 12 mm or less and the distance between bar centres is 210 mm or less; and
 - 3) the trench length to width ratio is below 3:2, i.e. length is greater than 1.5 times the width.”
- “S7.6.5 In all other cases, when the existing concrete is reinforced, the reinforcement within the excavation must be measured and recorded by the undertaker in the relevant street works notice or permit and the reinforcement in the reinstatement must replicate the original construction.”

Compaction testing for Bituminous Materials (Air Voids)

Air Void requirements at S10.2.8 broadly unchanged. Other changes within the Code expected to support compliance and testing accuracy.



Original DfT Consultation - Commentary:

“Many utilities claim that it is not possible to meet the code's air void requirements every single time no matter how conscientiously the work is carried out. Authorities disagree and consider that the air voids limits are always achievable. The truth appears to lie somewhere in the middle.”

Air Voids – some key points:

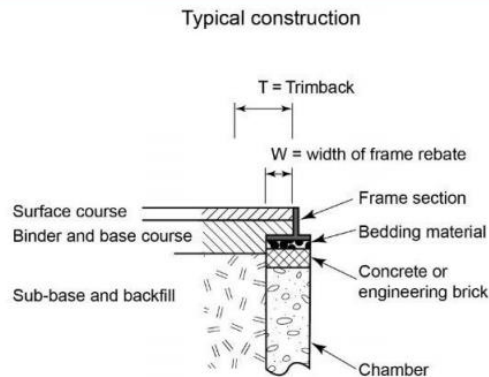
- Air Void content requirements at [Table S10.1](#) :
 - were not changed;
 - for some ACs, the minimum air voids content is reduced to 0.5% if binder content is increased.
- A wider range of bituminous materials at [Appendix A2](#), including those with increased binder contents provides further options to meet Air Void contents [*See separate materials slides*]
- [NGA 8.3](#) is retained to provide guidance on compaction in order to meet the specification.
- The selection of backfill material/compaction equipment/influence of weather conditions will also carry an influence [[S10.2.13](#)]
- [NG10.2](#) identifies a ‘pre-waxed sealed option’ for testing with 1 extracted core with trimming of the core bottom recommended (only if specified length exceeded).

Ironwork in roads, footways, footpaths and cycle tracks

Additional compaction and material options specific to S11.5 are noted here including application in footways. PMMA provisions cross-reference to S6.5.3.



Figure S11.1 Reinstatement next to a chamber



Trimback in the carriageway:

For a flowable material, $T = W + 50 \text{ mm}$

For asphalt, $T = W + 30 \text{ mm} + \text{width of compaction sole plate}$

Trimback in a footway, footpath or cycle track:

For a flowable material, $T = W$

For asphalt, $T = W + 30 \text{ mm} + \text{width of compaction sole plate}$

“S11.5.15 Reinstatement materials that require compaction

If reinstatement materials are used that require compaction e.g. granular sub-base, HRA, etc., the width of trimback required will be the width of the frame base plus the width of the compaction tool sole plate plus 30 mm.

S11.5.16 Reinstatement materials that do not require compaction

If reinstatement materials are used that do not require compaction e.g. concrete or PMMA, then a minimum width of trimback will be required to install the apparatus and ensure depth of penetration of the reinstatement material. For roads this will be a minimum of 50 mm in excess of the flange width. For footways, footpaths and cycle tracks the minimum width of trimback is the width of the frame.”

Provisions for compaction against restrictions [S11.5.8]:

- Compaction in accordance with S10.3. is preferred
- Mechanical pole tampers may be used in footways
- In footways, hand compaction may be used only:
 - if shown to be custom and practice before 4th Edition, or
 - via A9, using S2 compliance track record, or by agreement.
- In roads, hand compaction may be used only via A9, using S2 compliance track record, or by agreement.

Additional PMMA requirements :

“S6.5.11(6) PMMA must be applied in lifts of 30 to 50 mm thick, and within the manufacturer’s recommended temperature range....”

“S6.5.11(7) PMMA must be finished with a suitable treatment to provide the necessary skid resistance. This may be 6, 14 or 20 mm bitumen coated chippings or 1 to 3 mm calcined bauxite to the specified PSV. These treatments are applied directly to the hot material and when suitably cooled, lightly rolled or tamped to ensure adequate embedment. For footways only, hard stone grit or a stippled roller may be used as an alternative to chippings or bauxite to provide texture for skid resistance purposes.”

Wider pallet of available materials at Appendix A2

A key review area was to make the SROH more flexible and allow the use of different materials in different circumstances.



See also
additional details
in Appendices

A2.1 Hot rolled asphalt (HRA) mixtures

- **HRA 30/10 F** is now a permitted option, for HRA surface course, in:
 - roads types 3 and 4, and
 - footways, footpaths and cycle tracks. [A2.1.8]
- High stone content **HRA 55/10 F** and **HRA 55/14 F** have been added to the permissible list of HRA surface courses in roads types 3 and 4 [A2.1.8]. [Special care should be taken when using these high stone content HRAs in order to comply with texture depths – NGA2.1(2)]
- The use of **HRA 30/10 F** is especially convenient when the reinstatement extends into road types 3 or 4, as the same material can be used for the whole surface [NGA2.1(2)]. [Also, Footways surfaced with AC can be reinstated with a HRA – S8.3.10]

A2.3 Asphalt concrete mixtures

- Carriageway **AC10** can now be specified to have a higher binder content to improve performance. The binder content increase must be done by agreement where evidence of successful experience has been presented, including avoiding adverse impact on rutting and skid resistance [A2.3.5(2)]. [Included to provide options for mixtures that have enhanced workability and reduce risks associated with air voids non-compliance – NGA2.3]
- Footway **AC6** can now also be specified to have a higher binder content to improve performance [A2.3.6(2)]. [Included for similar reasons – NGA2.3]
- Where **AC10 close surf 100/150** is used to reinstate a carriageway and it extends to the footway (up to a maximum total of 10m or 4m² in the footway over a continuous reinstatement), the same material can be used in the footway. [A2.3.6(2)]

A2.5 Flowable materials

Polymer modified mastic asphalt (PMMA)

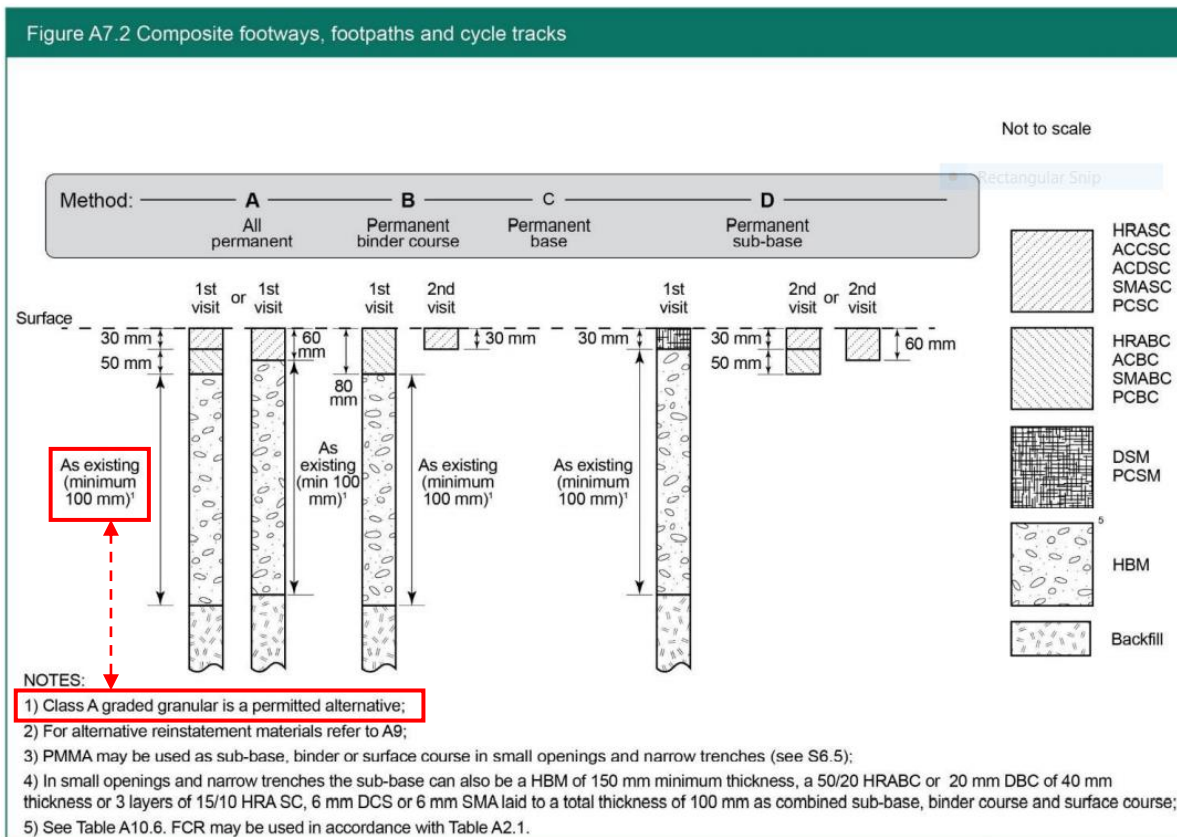
- For narrow and small openings A2.5 compliant PMMA can be used as bedding, backfill or surfacing material (but must meet the requirements of S2 and the details in the Product acceptance scheme) [S6.5.5 - S6.5.7]

Composite Footways, footpaths and cycle tracks

A new Appendix A7.2 for composite footways has been prepared to provide fresh specification. Old A7.2/A7.3 are re-numbered new A7.3/A7.4



“Definitions A pavement comprising lean mix concrete or other hydraulically bound material (including cement bound granular mixtures) overlaid with a bituminous surface course or a bituminous surface and binder course.”



- The bound material below the bituminous course(s) in the reinstatement is a HBM in accordance with A10.
- Note (1) in Figure A2.7 permits Class A graded granular material (which includes Type 1 granular sub-base) in lieu of a HBM.

Alternative reinstatement materials and technologies

Appendix A9 has been reviewed with new clarification over requirements to comply with A9 as well as introducing new materials and classifications



A9.1 New or alternative reinstatement materials (ARMs) and alternative technologies (ATs) may be developed for use in street works. ARMs and ATs might be used to improve safety or reduce disruption, cost, noise or other environmental impacts.

A9.1.2 There are three groups of ARMs:

- 1) Structural materials for reinstatements (SMRs, see A9.1.3)
- 2) Treated materials for fills (TMFs, see A9.1.4 and A9.1.5)
- 3) Other types of ARM, for example bituminous bound products (e.g. asphalt surfacing) that do not fit within the classification or application within A9.1. These can be used if they meet the performance requirements of this Code, are supported by a Quality System (A9.2.2) and are approved via A9 trials (see A9.5)."

Other points and re-designated standard materials:

- Materials under A9 to be considered as “alternative” rather than standard
- A9 now has increased focus on SMRs (FSMRs and NFSMRs) and TMFs
- A2.5 compliant PMMAs and FCRs are not FSMRs – no need to comply with A9
- A10.2 compliant HBM’s are not Non-Flowable SMR’s – no need to comply with A9

Rationalising Innovation Process

Appendix A9 has reviewed the outline scheme for approval trials and has been updated to include trials for alternative technologies (ATs)



Original DfT Consultation - Commentary:

“The process for introducing innovation has been revised to include new methods as well as materials. We have also reduced the code's overly prescriptive requirements in terms of trials and trial periods.”

A9 – some key points:

- Trial periods will no longer be fixed (SROH v3 A9 route had standard 2-year period)
- Trial periods to be set by agreement reflecting the nature of method or material
- Some historical ‘alternative materials’ have now been moved to the main body of the SROH at Appendix A10:
 - HBMs (as noted already)
 - Modified type 1F granular material (0/20) [Alternative sub-base material]
- Expanded wording allows for innovation of process/equipment, as well as materials
- **NGA9.1** – where appropriate, ARMs and ATs should be developed with a view to being covered under a Product Acceptance Scheme
- **NGA9.5** - Figures NGA9.1 and NGA9.2 show supporting flow charts for ARMs and ATs

Additional Standard Materials

Appendix A10 has been created to differentiate known standard materials from Appendix A9 materials. Street Works mixes refer to BS EN Standards



“A10.0 General

A10.0.1 This appendix includes specifications for hydraulically bound and unbound materials that are options for use in reinstatements drawn from BS EN standards. These materials may be used where listed as an option in this standard. Many of them have technical advantages compared with conventional alternatives, including a modified Type 1F Unbound Mixture (0/20) to mitigate technical risks associated with potential segregation and non-uniform compaction within reinstatements.

A10.0.2 The quality control requirements under A10 for HBMs are for production sites that include specific constituent storage, testing and other related quality control procedures, as specified in BS EN 14227. Products that do not comply with all the requirements of A10 may be proposed under A9.”

Additional Standard Materials

Appendix A10 has been created to differentiate known standard materials from Appendix A9 materials. Street Works mixes refer to BS EN Standards



“A10.1 Modified Type 1F Unbound Mixture (0/20)

A10.1.1 Modified Type 1F Unbound Mixtures must be made from natural aggregate (excluding uncrushed flint based or quartz based gravels), recycled aggregates, manufactured aggregates or well burnt non-plastic shale, or a combination of these, and may contain up to 10% by mass of natural sand passing a 4 mm test sieve.”

A10 – some key points:

- Modified type 1F is a granular material that may be used as an alternative sub-base material in restricted areas.
- The requirements for materials/grading broadly follow Type 1 Unbound Mixtures to MCHW Clause 803

Additional Standard Materials

Appendix A10 has been created to differentiate known standard materials from Appendix A9 materials. Street Works mixes now refer to BS EN Standards



“A10.2 Hydraulically bound materials (HBMs)

A10.0.2 HBMs must be in accordance with.....(BS EN 14227) standards, depending on the binder used....”

A10 – some key points:

- HBM binders include cement, slag, fly-ash and other materials
- The SROH now widened to include all relevant specification extracts from BS EN 14227
- Additional in-situ requirements for placement, compaction, protection and overlaying have been added, which include:
 - “A10.2.27 Laying and compaction of HBM layers...whether constructed in one or more lifts, must be carried out without segregation, drying out or before setting.
 - A10.2.31 For multiple lift working, fresh HBM must not be laid on HBM that has been allowed to dry. The temporary intermediate surfaces of lifts must be kept moist.
 - A10.2.36 1) Unless overlain (surfaced) immediately, the upper surface of the HBM must be cured to prevent loss of moisture by applying a bituminous emulsion spray.....”
- The SROH has also included a more comprehensive production and testing regime, which is clearly documented and referenced to BS EN 14227-4. Producers need to use 14227 in harmony with the A.10.1

Reinstatement Guarantee – Current and Future

Section S1.2 sets out the current Guarantee Periods (unchanged). A new additional period is at Appendix A12. Future Guarantee Periods are discussed



“S1.2.2 The guarantee period begins on completion of the permanent reinstatement and runs for two years in general, or three years in the case of deep openings.....”

“Infills in modular reinstatements

A12.2.7 General”

“(4) If the gap requiring a new cement infill is the result of an uneven surface (existing before commencement of the works), the new cement infills should be limited to a 1 year guarantee. All practicable effort should be made to avoid the use of cement infills for this application. For the 1 year guarantee to apply to the cement infills the undertaker is required to document the existing surface before commencement of works and must be able to demonstrate why all alternatives to the use of cement infills for this application have been ruled out.”

Increased Guarantee Periods – in the future?

- An increased guarantee period of 5 years was proposed as an option in the consultation.
- The published 4th Edition has been issued with no increase to the guarantee periods [S1.2.2].
- The Department for Transport advise that any future decision sits with Ministers.
- The HAUC (UK) SROH Working Party has advised a complete review of the 4th Edition would be required in order to implement such a change.

Appendices and Supplementary Information

Additional extracts from the SROH 4th Edition or other information



1. Amendments to definitions
2. Large diameter cores [Figure NG6.3 – Typical large core reinstatement]
3. Wider pallet of available materials at Appendix A2:
 - Table NGA2.2 Selection of asphalt surfacing reinstatement materials
 - HRA surface course mixtures with pre-coated chippings [Appendix A2.1 and S6.4.19]
4. Additional Drawing for Consideration [Limits of 4m² or 10m rule for AC10 in footways]
5. Product Approval Schemes [References in SROH and MCHW extracts]



Amendments to definitions

Inclusion of new definitions:

- **Composite footway** – support specific reinstatement provision
- **DMRB** and **MCHW** - to refer to updated documents.
- **FCR** and **PMMA** - to include foamed concrete and polymer modified mastic asphalt as standard materials.
- **Large diameter core** and **micro trench** - to include these techniques in the specification.
- **NRSWA** - for clarity.
- Other openings - included for completeness.
- **Product Acceptance Scheme** - substitution to BBA HAPAS certification linked to update to the MCHW.
- **UKAS** - amended for clarity.

Amendments of definitions:

- “Major projects” to “**Major works**” - for clarity.
- **Restricted area** and **small features** - amended for clarity.
- **Surface treatment** - amended for clarity.
- **Small openings** - up to 2m² or 4m² (excluding the apparatus surface area) depending on road category

SROH 3rd Edition definitions – now deleted:

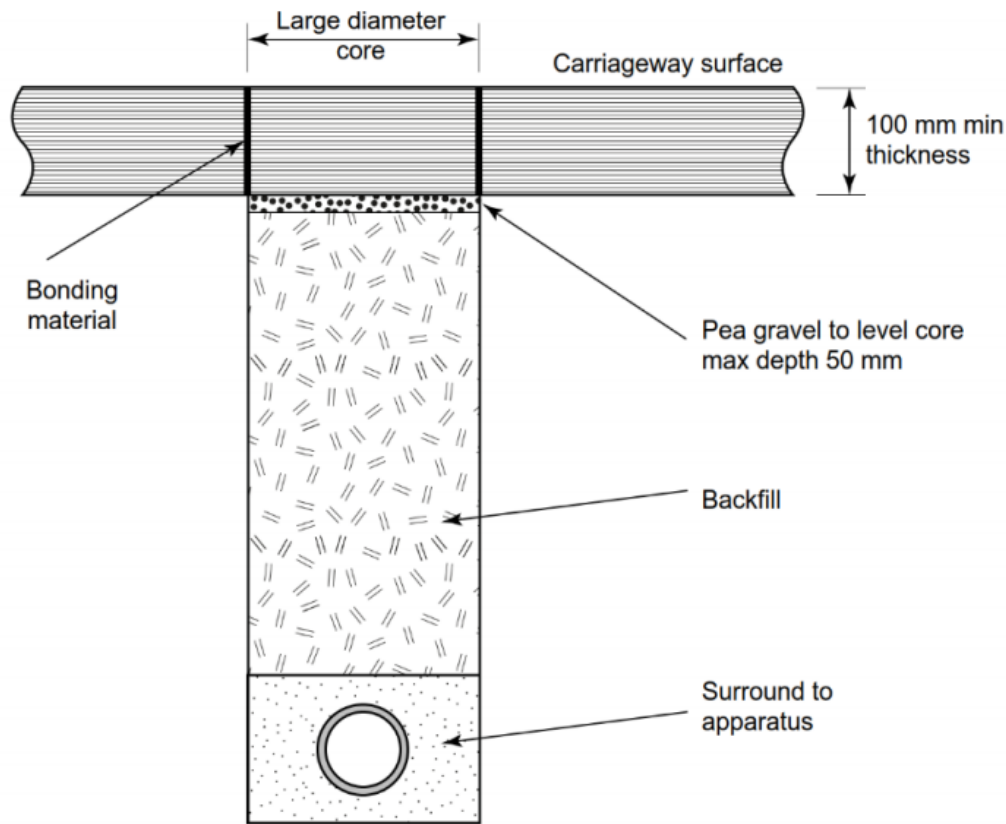
- **BBA/HAPAS**
- **ETA**
- **HD**
- **Permitted**
- **PTV**
- **SHW**
- **Tack coat**
- **Traffic sign**
- **TRL**
- **Urgent works**

Large diameter cores

Figure NG6.3 – Typical large core reinstatement



Figure NGA6.3 Typical large core reinstatement



Wider pallet of available materials at Appendix A2

Table NGA2.2 Selection of asphalt surfacing reinstatement materials.

[Opportunities for common carriageway and footway surface course materials highlighted]



Table NGA2.2 Selection of asphalt surfacing reinstatement materials

Existing	Road type 0&1	Road type 2	Road type 3&4	Footway, footpath and cycle track
If the existing surfacing is HRA or AC, HRA mixtures described on the right are acceptable. If the existing is TSCS or SMA the use of HRA is by agreement	HRA 30/14 F surf PMB des WTR2***	HRA 30/14 C surf 40/60 des*	HRA 30/10 F surf 40/60 rec	HRA 15/10F surf 100/150 rec
	HRA 30/14 C surf 40/60* des WTR2***	HRA 30/14 F surf 40/60 rec	HRA 30/14 C surf 40/60 des*	HRA 30/10 F surf 40/60 rec
	HRA 35/14 F surf PMB des WTR2***	HRA 30/14 F surf 40/60 des	HRA 30/14 F surf 40/60 rec	HRA 30/10 F surf 70/100 rec
	HRA 35/14 C surf 40/60* des WTR2***	HRA 35/14 F surf 40/60 des	HRA 30/14 F surf 40/60 des	HRA 30/10 F surf 100/150 rec
	-	HRA 35/14 F surf 40/60 rec	HRA 35/14 F surf 40/60 des	-
	-	-	HRA 55/10 F surf 100/150 des	-
	-	-	HRA 55/14 F surf 40/60 des	-
	-	-	HRA 55/14 F surf 100/150 des	-

Table NGA2.2 Selection of asphalt surfacing reinstatement materials

Existing	Road type 0&1	Road type 2	Road type 3&4	Footway, footpath and cycle track
If the existing surfacing is SMA/TSCS or AC, the SMA mixtures described on the right are acceptable	SMA 14 surf PMB WTR2***	SMA 14 surf PMB	SMA 14 surf PMB	SMA 6 surf 40/60
	SMA 14 surf 40/60 WTR2***	SMA 14 surf 40/60	SMA 14 surf 40/60	SMA 6 surf 70/100
	SMA 10 surf PMB WTR2***	SMA 14 surf 100/150	SMA 14 surf 100/150	SMA 6 surf 100/150
	SMA 10 surf 40/60 WTR2***	SMA 10 surf PMB	SMA 10 surf PMB	-
	SMA 6 surf PMB* WTR2***	SMA 10 surf 40/60	SMA 10 surf 40/60	-
	SMA 6 surf 40/60* des WTR2***	SMA 10 surf 100/150	SMA 10 surf 100/150	-
	-	SMA 6 surf PMB*	SMA 6 surf PMB*	-
	-	SMA 6 surf 40/60*	SMA 6 surf 40/60*	-
If the existing surfacing is AC the AC mixtures described on the right are acceptable	AC10 close surf 100/150 WTR2***	AC10 close surf 100/150	AC10 close surf 100/150	AC10 close surf 100/150**
	-	-	-	AC6 close surf 100/150
If the existing surfacing is SMA/TSCS	TSCS if required by the authority			
* Only by agreement				
** if trench is in carriageway and extends to the footway (maximum continuous 10 linear m or 4 m² or by agreement)				
*** WTR1 is permitted for road type 1 for locations outside heavily stressed areas				

A2.1 Hot rolled asphalt (HRA) mixtures

- The use of **HRA 30/10 F** is especially convenient when the reinstatement extends into road types 3 or 4, as the same material can be used for the whole surface [NGA2.1(2)]. [Also, Footways surfaced with AC can be reinstated with a HRA – S8.3.10]

A2.2 Stone mastic asphalt (SMA) mixtures

- Where the HA uses **SMA 6 surf 40/60** or **SMA 6 surf 100/150** in road types 3 or 4, there is a clear opportunity for single surface course material to be used in both carriageway and footway works. [eff. A2.2.5]

A2.3 Asphalt concrete mixtures

- Where **AC10 close surf 100/150** is used to reinstate a carriageway and it extends to the footway (up to a maximum total of 10m or 4m² in the footway over a continuous reinstatement), the same material can be used in the footway. [A2.3.6(2)]



Wider pallet of available materials at Appendix A2

HRA surface course mixtures with pre-coated chippings [Appendix A2.1 and S6.4.19]



“A2.1.5 Chippings for surface application to HRA surface course mixtures must be coarse aggregate conforming to PD 6691 appendix C, C.2.3 and meet the requirements of C.2.8.....Where pre-coated chippings are to be embedded into a road surface, they must be spread to give a chipping density as per BS 594987 or reasonably matching that of the existing surface notwithstanding the requirements for surface texture specified in S2.6” [See also 6.4.19]

Figure NGA2.1 Examples of Chippings rate

Low volume of chippings (potential risk of low skid resistance)	High volume of chippings and localised double chipping (risks include loss of chippings)
	

“NGA2.1 Surface course mixtures

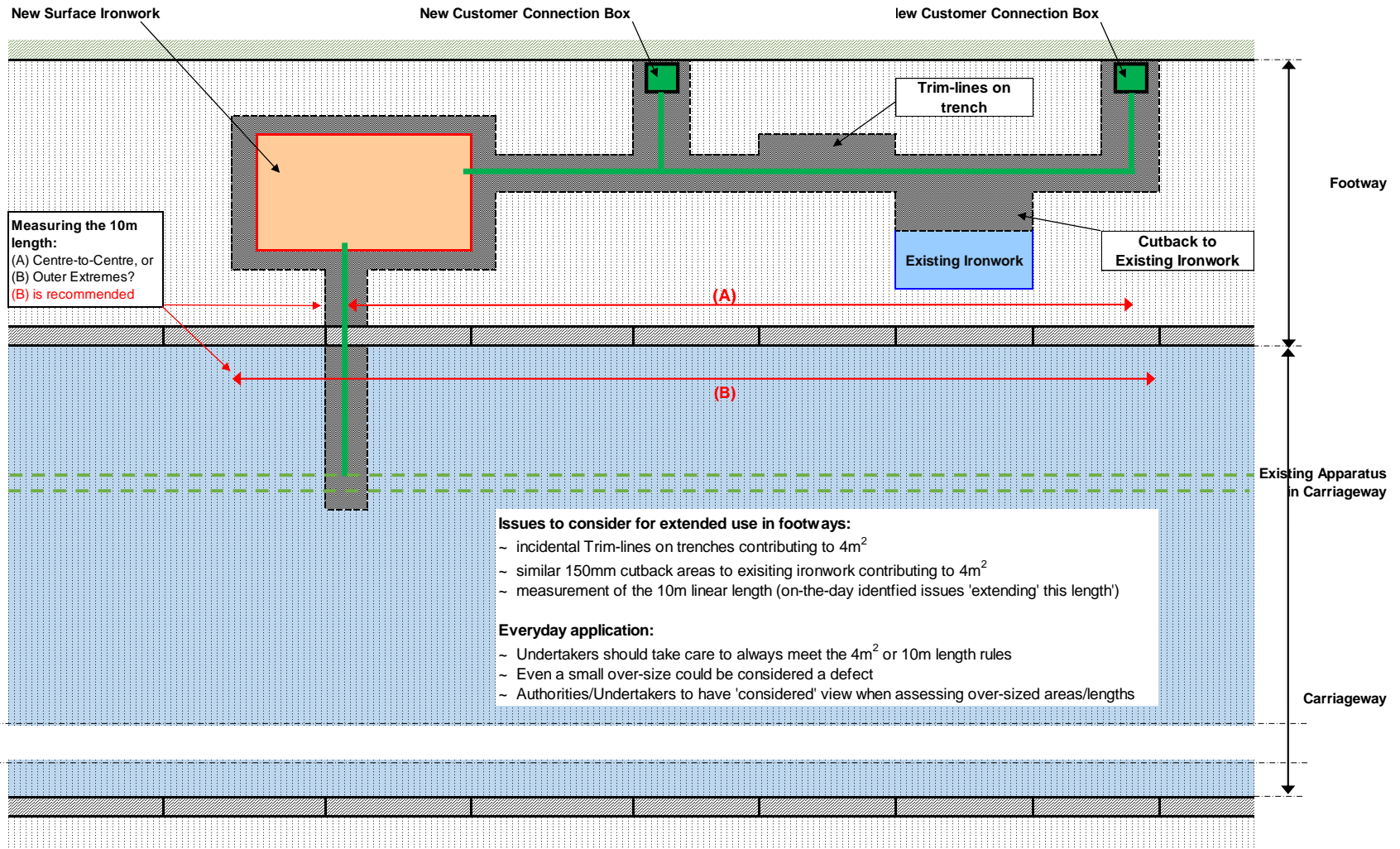
- (1) The advantage of using chipped HRA 30/10F 40/60 is that the mixture can be used in footways, footpaths, cycle tracks and the carriageway. The other HRA options are limited in application.”

Additional Drawing for Consideration

Supporting interpretation of the 4m² or 10m length of AC10 used in footways



Carriageway AC10 surface course extending into adjacent footway (up to a maximum total of 10m length or 4m² continuous reinstatement)



Product Acceptance Schemes

References in SROH and MCHW extracts



“Product Acceptance Scheme

Product Acceptance Scheme in accordance with 100 Series of the MCHW, Clauses 104.15 and 104.16 (such as British Board of Agrément certificates).”

- S6.4.12 High friction surfaces
- S6.7.12 Bonding material for large diameter cores
- S6.8 Base preparation bond coat (ref. definitions)
- S6.8.8 Overbanding
- S11.5.6 Concrete used around Ironwork
- S12.3.3 Repair of interface cracking
- A2.4 Cold-lay surfacing materials (PCSMs)
- A2.5 Flowable materials PMMA [also incl. S6.5.7]
- A2.6.5 Alternative proposed infill materials for micro trenching
- NGA2.2 SMA mixtures - alternative thin surface course systems
- NGA9.1 ARMs and ATs - develop with view of PAS coverage

(05/14) Product Acceptance Schemes

15 (05/14) Where there are references in the specification to particular industry product acceptance schemes such as British Board of Agrément Certificates, Roads and Bridges Certificates, HAPAS certificates, CARES certificate or equivalent scheme, these shall be taken as references to a product acceptance scheme that has the attributes given in sub-Clause 16 below. The types of work, goods or materials listed in Appendix C are required to be certificated by a product acceptance scheme prior to their inclusion in the works.

16 (05/14) The works, goods or materials shall be assessed against a set of guidelines and criteria by a Certification Body. Certification to confirm the products successfully meet the guidelines and criteria shall be issued by a Certification Body. The Contractor shall provide information on the product to the Overseeing Organisation for acceptance. This information shall include the certification and, when requested, details of the scheme to confirm its compliance with the criteria given below and accreditation details of the organisation issuing the certification.

The scheme shall meet the following criteria:

- (a) Product acceptance and certification specified in this sub-Clause shall be structured and implemented to provide assurance to the Overseeing Organisation that the product, when supplied for its intended use and installed or processed post manufacture, in accordance with the manufacturer’s instructions, will give the performance and level of safety required by the specification and be fit for purpose.
- (b) The organisation certifying products and issuing the certificates must be accredited to the relevant Certification Body standard, BS EN 45011 or BS EN ISO/IEC 17065 for product certification, or BS EN ISO/IEC 17020 for site inspection, by UKAS or equivalent European Accreditation Organisation, which is party to a multi-lateral agreement (MLA) with UKAS or any equivalent International Accreditation Forum (IAF) MLA signatory with a scope which includes the relevant standard(s). This shall include accreditation to manage and execute a certification scheme as defined in this sub-Clause. Accreditation must cover a scope of activity relevant to the construction, installation, maintenance and operation of highway infrastructure.
- (c) The scheme must cover as appropriate:
 - i) Manufacture and installation or post manufacture processing of those products for which a Declaration of Performance, and consequent CE marking, has not been made on the basis of any harmonised European Standard (hEN) or European Technical Assessment; or
 - ii) Only the installation of a material or post manufacture processing where the manufacturer has made a Declaration of Performance of the material (with consequent CE marking); or
 - iii) Product characteristics not included in the required essential characteristics of a hEN or in a European Technical Assessment if such characteristics provide additional protection for the consumer (e.g. road user).
- (d) The assessment and certification requirements for a product certified under the scheme must be developed ensuring due consideration is given to the requirements of the users of the product and those responsible for the highways on which such products will be used or installed.

- (e) The scheme must have a technical supervisory panel that provides technical oversight on the operation of the scheme and formally consents to the issue of assessment and certification requirements of the specialist groups developing the assessment and certification requirements. This panel must include a balanced representation of key end users, recognized industry experts and those responsible for the highways on which such products will be used or installed.
- (f) The product certification must include requirements for the audit and quality control of the production and installation processes for the product where necessary taking account of the product having its performance declared under a CE mark. Installer certification must include requirements for on-site surveillance of installation or post manufacturing processes.
- (g) For every product it has certified under a product certification scheme, an organisation must make open and publicly accessible details of the assessment and certification guidelines.
- (h) Where different organisations have certified the same generic form of product they must be able to demonstrate to the Overseeing Organisation equivalence of performance of products certified under the different schemes or agree a common set of guidelines for the assessment and certification of the product.
- (i) The competences of organisations certifying products shall be as the competency requirements for Technical Assessment Bodies given in Regulation (EU) No 305/2011, the Construction Products Regulation, Annex IV, Table 2 with the additions given in Table 1/1.

(05/14) **Table 1/1 Competency additions to Construction Product Regulation (EU) No. 305/2011 Annex IV, (Table 2)**

Competence	Description of Competence	Requirement
7. Determining the specific installation or post manufacturing control	Understand and evaluate the installation or post manufacturing processes of the specific product in order to identify appropriate measures ensuring consistent compliant delivery of the installed or post manufactured product.	A certification body shall have staff with appropriate technical knowledge of the relationship between the installation/post manufacturing processes and the product characteristics related to production control for installation or post manufacture.
8. Constructive engagement	Be prepared to engage constructively with highway infrastructure managers and other certifying bodies for resolution of issues.	Be able to resolve differences in the certified performance of products of the same generic type and where appropriate agree a common set of guidelines for the assessment and certification of such products.