

# NRASW CANDIDATE PREPARATION GUIDE

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## NRASW CANDIDATE PREPARATION GUIDE

### Introduction to Streetworks Candidate Preparation Guide

This guide is intended to be used to prepare operatives and supervisors for assessment for Streetworks units.

It should be noted that operatives will be required to undertake a practical exercise for each unit. Supervisors are required to observe operatives working on a live or simulated Streetworks site and prepare a report on each activity (unit). The supervisor must provide evidence that they have monitored the activity, identified any areas of poor performance or poor practice, and state what their remedial actions would be.

**The guide identifies essential knowledge that candidates should know prior to attending an assessment. Lack of preparation is likely to reduce the candidates' opportunity to provide sufficient evidence of their competency.**

Unless otherwise stated, all of the references to chapters, appendices, guidance notes and page numbers refer to the HAUC Specification for the Reinstatement of Openings in Highways (4<sup>th</sup> Edition).

### Using this document

This document has been designed for viewing on a computer or iPad/tablet to avoid the need for printing.



Each unit can be accessed by clicking on the relevant line on the table of contents on page 1. This link will take the user to the appropriate page for that heading.

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Unit 001 Location & Avoidance of Underground Apparatus .....	5
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### Requirements for operatives and supervisors

The New Roads and Street Works Act 1991 (NRSWA) requires work involving the installation, renewal, maintenance and inspection of underground apparatus in the highway to be under the control of competent persons. In order to comply with the Act, undertakes must ensure that (except in prescribed cases) the execution of street works is supervised by someone holding a supervisor's qualification that covers the work being undertaken. The supervisor need not be present on site at all times, but must be able to carry out their role adequately. In addition, a person holding an appropriate operative qualification must be present on the site at all times when work activities are in progress.

The Street Works qualifications for operatives and supervisors are listed below. Please note that the supervisor qualifications do not replace or subsume the operative qualifications: any individual wishing to undertake a supervisor's role must hold the relevant supervisors' qualifications, and a qualified operative must hold the relevant operatives' qualifications. One person cannot cover both an operative role and supervisor role at the same time.

To become a qualified operative or supervisor, a candidate must gain one or more of the qualifications listed below and must hold the appropriate certificate(s) issued by one of the three Street Works awarding bodies. The qualifications of operatives and supervisors must be registered with the Street Works Register, which is administered by SQA in Scotland. In order for a person to continue to act as a qualified operative or supervisor, this registration must remain current.

Unit	Title	O/S
001	Location and avoidance of underground apparatus	O & S
002	Signing, lighting and guarding	O
003	Excavation in the highway	O
004	Reinstatement and compaction of backfill materials	O
005	Reinstatement of sub-base and base (roadbase) in non-bituminous materials	O
006	Reinstatement of cold-lay bituminous materials	O
007	Reinstatement of hot-lay bituminous materials	O
008	Reinstatement of concrete slabs	O
009	Reinstatement of modular surfaces and concrete footways	O
010	Monitoring signing, lighting and guarding	S
011	Monitoring excavation in the highway	S
012	Monitoring reinstatement and compaction of backfill materials	S
013	Monitoring reinstatement of sub-base and base (roadbase) in non-bituminous materials	S
014	Monitoring reinstatement in bituminous materials	S
015	Monitoring reinstatement of concrete slabs	S
016	Monitoring reinstatement of modular surfaces and concrete footways	S

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There were 16 units before - now there are 16 certificates, namely LA, O1 to O8, and S1 to S7 (the units have become individual certificates). There are three key certificates and the new certificate structure is as follows:

### Common to operatives and supervisors:

LA - Location & avoidance of underground apparatus KEY CERTIFICATE

### O-series certificates, for operatives only:

O1 - Signing, lighting and guarding KEY CERTIFICATE

O2 - Excavation in the highway

O3 - Reinstatement and compaction of backfill materials

O4 - Reinstatement of sub-base and base in non-bituminous materials

O5 - Reinstatement in cold lay bituminous materials

O6 - Reinstatement in hot-lay bituminous materials

O7 - Reinstatement of concrete slabs

O8 - Reinstatement of modular surfaces, concrete footways

### S-series certificates, for supervisors only:

S1 - Monitoring signing, lighting and guarding KEY CERTIFICATE

S2 - Monitoring excavation in the highway

S3 - Monitoring reinstatement and compaction of backfill materials

S4 - Monitoring reinstatement of sub-base and base in non-bituminous materials

S5 - Monitoring reinstatement in bituminous materials

S6 - Monitoring reinstatement of concrete slabs

S7 - Monitoring reinstatement of modular surfaces, concrete footways

LA and O1 are the only two key certificates for operatives. If you are an operative, you therefore need the following to be qualified to excavate or reinstate:

- LA - Location & avoidance of underground apparatus;
- O1 - Signing, lighting and guarding; and
- The relevant O-certificate(s), from O2 to O8.

LA and S1 are the only two key certificates for supervisors. If you are a supervisor, you therefore need the following to be qualified to monitor excavation or reinstatement:

- LA - Location & avoidance of underground apparatus;
- S1 - Monitoring signing, lighting and guarding; and
- The relevant S-certificate(s), from S2 to S7.

There is no requirement to hold any particular combination of non-key certificates. As long as you hold the key certificates, you can choose to hold as many or as few of the others as you like to suit the work that you do. **For example, if you only wanted to be qualified to carry out reinstatement in hot-lay bituminous materials, you would need the two key operative certificates plus certificate O6.** This principle applies similarly to supervisors.

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### Required Publications

The HAUC assessment strategy states: *“Candidates undertaking initial and reassessment will be examined on their current knowledge of the standards, principles and application of the current documents and Codes of Practice by a 20 question multiple-choice examination for each certificate. The pass mark for each examination is set at 80%. The time allowed is 45 minutes for each examined certificate.”*

**Candidates are only permitted access during examinations to the documents listed below.** No other notes, handouts, or personal media devices are allowed.

1. Specification for the Reinstatement Openings in Roads/Highway, Code of Practice
2. Safety at Street Works and Road Works, Code of Practice (Department for Transport)
3. An Introduction to Vehicle Actuated Portable Traffic Signals (Department for Transport)
4. Avoiding Danger from Underground Services HSG 47(Health and Safety Executive)
5. Health and Safety in Construction HSG 150 (Health and Safety Executive)
6. Volume 1: NJUG Guidelines on The Positioning and Colour Coding of Underground Utilities' Apparatus (National Joint Utilities Group)

Unit No.	Certificate title	Reference documents
001	Location and avoidance of underground apparatus	1, 2, 4, 5, 6
002	Signing, lighting and guarding	2, 3
003	Excavation in the road/highway/road	1, 2, 4, 5, 6
004	Reinstatement and compaction of backfill materials	1, 2, 4, 5, 6
005	Reinstatement of sub-base and base(roadbase) in non-bituminous materials	1, 2, 4, 5
006	Reinstatement in cold-lay bituminous materials	1, 2
007	Reinstatement in hot-lay bituminous materials	1, 2
008	Reinstatement of concrete slabs	1, 2
009	Reinstatement of modular surfaces and concrete footways	1, 2
010	Monitoring signing, lighting and guarding	2, 3
011	Monitoring excavation in the road/highway/road	1, 2, 4, 5, 6
012	Monitoring reinstatement and compaction of backfill materials	1, 2, 4, 5, 6
013	Monitoring reinstatement of sub-base and base (roadbase) in non-bituminous materials	1, 2, 4, 5
014	Monitoring reinstatement in bituminous materials	1, 2
015	Monitoring reinstatement of concrete slabs	1, 2
016	Monitoring reinstatement of modular surfaces and concrete footways	1, 2

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### Unit Specific Guidance for Candidates

#### Unit 001 Location & Avoidance of Underground Apparatus

Prior to attending for assessment, the candidate **must** have received training in the following aspects of location and identification of underground apparatus:

- Reading and interpreting utilities plans
- Identification and interpretation of symbols used on utility plans
- Correct use of cable avoidance tool (CAT) or similar
- Correct use of Genny or similar signal generator
- Identification of different types of underground apparatus
- Ability to identify any damage to utility apparatus
- Awareness of the potential dangers from utility apparatus
- Awareness of procedures to be followed if utility apparatus is damaged

It is advised that candidates have had the opportunity to read Health & Safety Executive Guidance Note HSG 47. The candidate should be aware of the Management of Health & Safety at Work Regulations and the requirements for all work activities to be Risk Assessed.

#### Unit 002 & 010 Signing, Lighting & Guarding

Prior to attending assessment, the candidate **must** have received training in signing, lighting, and guarding of temporary roadworks situations. The candidate should be familiar with the following documents:

- The “Red Book” - Safety at Street Works and Road Works – A Code of Practice
  - Pages that they need to read in particular can be found in the table below. In addition to these, it will be beneficial for them to familiarise themselves with:
    - the chart on the inside back cover
  - Wider reading of the publication is also needed
- The “Pink Book” - Introduction to the Use of Portable Vehicular Signals
  - Sections of this that are a must read are those that deal with mode of operation and troubleshooting

Candidates should be aware of the need to assess the risks associated with working on the highway and be able to complete an on-site risk assessment that will show their ability to:

- Identify and categorise hazards
- Quantify risks
- Suggest and implement appropriate control measures

Unit 002 candidates (Operatives) will be required to set up and remove a roadworks layout that will be explained to the candidate by their assessor. The layout will include the need to provide a temporary pedestrian walkway and control traffic using temporary traffic signals (traffic lights).

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*The "Red Book" - Safety at Street Works and Road Works – A Code of Practice*

Page	Subject Heading	Notes
4-5	Purpose of this Code of Practice*	
9	Responsibilities*	
10	Planning/Risk assessment	
13	On-site risk assessment*	
16-18	Advance Signing	
19-22	Coned Area/Basic Layout	
20	Safety zones*	
23-24	Information Board/End sign	
25-27	Setting out the works	
28-34	Footway and footpath works – look after pedestrians*	
36	Carriageway works	
52-55	Traffic Control*	
56-57	'Give and take'	
58	Priority signs	
60-62	Stop/Go boards*	
63-65	Portable traffic signals	
66	Installation and commissioning	
70	Temporary road closure	
72-73	'Stop-Works' sign	
77-79	Works adjacent to railways*	
81-82	Checking and Maintaining Sites	
83-86	Mobile works and short-duration works	
91	Vehicle requirements for mobile/short-duration works*	
93	Signs and cones	
94	Warning lights	
95-96	Basic signs and equipment	
97	Pedestrian barriers	
98-99	Footway ramps/boards	

Sections marked with \* are of particular relevance to Supervisors

Pink Book (Introduction to the Use of Portable Vehicular Signals) pages: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18

**Update:** This publication was withdrawn on 25 October 2023 as new guidance has been published [Current guidance is available from the Association of Road Traffic Safety and Management](#)

Please note that as of 19/02/2024, we have not received any notification from C&G or HAUC that the test papers have been updated in line with the new guidance documentation.

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### Unit 003 & 011 Excavation in the Highway

Each candidate will be required to undertake a practical exercise that includes;

- Cutting the surface of the carriageway
- Excavating through the carriageway layers
- Selection & storage of materials for re-use or disposal
- Support and protection of any underground apparatus found

The practical exercise must be carried out in accordance with the HAUC Specification for the Reinstatement of Openings in the Highway, (4<sup>th</sup> Edition).

Candidates must be familiar with all aspects of excavation & reinstatement in the highway and should have received training on the use and safe operation of plant, tools and equipment, and understand the need to wear the appropriate Personal Protective equipment. Candidates must be aware of their responsibilities to look after themselves and others who may be affected by their actions and omissions at work.

Candidates should be familiar with the requirements of the “HAUC Specification” in particular:

- Chapter 1, Operational Principles pages 19-23
  - S1.3 Road Categories
  - S1.4 Footway, footpath and cycle track categories
  - S1.5 Excavation and trench categories
  - S1.8 Apparatus within road structures
  - S1.9 Geosynthetic materials
  - S1.10 Trees
- Chapter 3, pages 40-42 sections:
  - S3.1 Breaking the surface
  - S3.2 Excavation
  - S3.3 Excavated material
  - S3.4 Side support
  - S3.5 Drainage
  - S3.6 Shallow or aborted excavations
- Appendix A1 Backfill materials including
  - A1.6 Field identification tests p.107
- Appendix A2.10 Identification of the structural layers p.125



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### Unit 004 & 012 Reinstatement & Compaction of Backfill Materials

Each operative candidate will be required to undertake a practical assessment that includes;

- Selection & storage of materials for re-use or disposal
- Placing and compaction of reinstatement of materials in the backfill layer
- Selection of appropriate compaction equipment
- Identification of the correct method of reinstatement
- Calculation of layers, their names and functions
- Correct material layer thickness and compaction passes
- Use of the “Clegg tester” for soil impact testing

The practical exercise must be carried out in accordance with the HAUC Specification for the Reinstatement of Openings in the Highway, (4<sup>th</sup> Edition). Candidates must be familiar with all aspects of excavation & reinstatement in the highway and **must** have received training on the use and safe operation of plant, tools and equipment, and understand the need to wear the appropriate Personal Protective equipment. Candidates must be aware of their responsibilities to look after themselves and others who may be affected by their actions and omissions at work.

Candidates should be familiar with the following requirements of the “HAUC Specification”:

- Appendix A3 Flexible roads pages 138-143 and in particular:
  - A3. 5 Flexible road type 4, page 142
  - A3. 6 Sub-base construction, Flexible roads, page 143
- Chapter 5: S. 5 Backfill pages 44-46
- Chapter 4. S4. Surround to apparatus, page 43
- Chapter 9: S. 9 Verges and unmade ground, pages 87-88
- Chapter 10. S10. Compaction requirements. Pages 89-93
- Appendix A8 Compaction requirements pages 160-162
  - A8. 1 Compaction requirements for granular, cohesive and cement bound materials
  - A8. 2 Compaction requirements for chalk materials
- Appendix A9 Alternative reinstatement materials (ARM's) in particular:
  - A9.3 Structural materials for reinstatements (SMR's) pages 166-168
    - Foamed concrete for reinstatements
    - Flowable SMR's (FSMR's)
    - Non-flowable SMR's (NFSMR's)

The Candidate should also have access to and have read Health and Safety in Construction HSG 150  
Download PDF from [www.hse.gov.uk](http://www.hse.gov.uk)

### Unit 005 & 013 Reinstatement of Sub-base & Base (road base) in non-bituminous materials

Each operative candidate will be required to undertake a practical assessment that includes;

- Selection & storage of materials for re-use or disposal
- Placing and compaction of reinstatement materials in the base-course and base (roadbase) layer
- Selection of appropriate compaction equipment
- Identification of the correct method of reinstatement
- Calculation of layers, their names and functions

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- Correct material layer thickness and compaction passes
- Use of the “Clegg Tester”

The practical exercise must be carried out in accordance with the HAUC Specification for the Reinstatement of Openings in the Highway, (4<sup>th</sup> Edition).

Candidates must be familiar with all aspects of excavation & reinstatement in the highway and **must** have received training on the use and safe operation of plant, tools and equipment, and understand the need to wear the appropriate Personal Protective equipment. Candidates must be aware of their responsibilities to look after themselves and others who may be affected by their actions and omissions at work.

Candidates should be familiar with the following requirements of the “HAUC Specification”:

- Appendix A3 Flexible roads pages 138-143 and in particular:
  - A3. 5 Flexible road type 4, page 142
  - A3. 6 Sub-base construction, Flexible roads, page 143
- Chapter 5: S. 5 Backfill pages 44-46
- Chapter 4. S4. Surround to apparatus, page 43
- Chapter 9: S. 9 Verges and unmade ground, pages 87-88
- Chapter 10. S10. Compaction requirements. Pages 89-93
- Appendix A8 Compaction requirements pages 160-162
  - A8. 1 Compaction requirements for granular, cohesive and cement bound materials
  - A8. 2 Compaction requirements for chalk materials
- Appendix A9 Alternative reinstatement materials (ARM's) in particular:
  - A9.3 Structural materials for reinstatements (SMR's) pages 166-168
    - Foamed concrete for reinstatements
    - Flowable SMR's (FSMR's)
    - Non-flowable SMR's (NFSMR's)

### Unit 006 & 014 Reinstatement of cold-lay bituminous materials

Unit 014 for supervisors covers both hot and cold-lay materials and is therefore included in the skills and knowledge candidate preparation requirements for unit 6 and unit 7.

Each operative candidate will be required to undertake a practical assessment that includes:

- Selection & storage of materials for re-use or disposal
- Placing and compaction of cold-lay bituminous materials in the binder and surface layers
- Selection of appropriate compaction equipment
- Identification of the correct method of reinstatement
- Correct layer thickness and compaction passes
- Finished profile within intervention limits

The practical exercise must be carried out in accordance with the HAUC Specification for the Reinstatement of Openings in the Highway, (4<sup>th</sup> Edition).

Candidates must be familiar with all aspects of excavation & reinstatement in the highway and **must** have received training on the use and safe operation of plant, tools and equipment, and understand the need to wear the appropriate Personal Protective equipment. Candidates must be aware of their

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responsibilities to look after themselves and others who may be affected by their actions and omissions at work.

Candidates should be familiar with the following requirements of the “HAUC Specification”:

- Chapter 2. S.2 Performance requirements, pages 26 to 39 and in particular
  - S2.2.1 As laid profile
  - S2.2.2 Edge depression-intervention
  - S2.2.3 Surface depression-intervention
  - S2.2.4 Surface crowning-intervention
  - S2.2.5 Combined defect-intervention
  - S2.2.6 Condition at end of guarantee period
- S2.3 Fixed features
  - S2.3.1 As-laid profile
  - S2.3.2 Intervention
- S2.4 Surface regularity, page 30 S2.6 Skid resistance, pages 33-35
- Appendix 2, A2.4 Cold-lay surfacing materials page 117
- Appendix NGA8.3 Compaction requirements for bituminous mixtures page 244
- Chapter 6, S6 Flexible and composite roads, pages 47 to 69
- Appendix A11 Bitumen binder equivalence, page 185

### Unit 007 & 014 Reinstatement of hot-lay bituminous materials

In addition to the skills and knowledge preparation requirements for unit 6 & 14 above, operative candidates undertaking unit 7, and supervisors undertaking unit 14 will need to be conversant with the following:

- Chapter 6, S6 Flexible and composite roads, pages 47 to 69, sections
  - S6.1.1 General
  - S6.1.4 Method A – All Permanent Reinstatement
  - S6.1.5 Method B – Permanent Binder course reinstatement
- Appendix A2 Key to materials with particular attention to page 125 section A2.9 Table A2.7 Bituminous laying temperatures
- Appendix A8.3 Compaction requirements for bituminous materials page 163
- Appendix A11 page 185

### Unit 008 & 015 Reinstatement of Concrete Slabs

The practical exercise must be carried out in accordance with the HAUC Specification for the Reinstatement of Openings in the Highway, (4<sup>th</sup> Edition).

Candidates must be familiar with all aspects of excavation & reinstatement in the highway and **must** have received training on the use and safe operation of plant, tools and equipment, and understand the need to wear the appropriate Personal Protective equipment. Candidates must be aware of their responsibilities to look after themselves and others who may be affected by their actions and omissions at work.

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Operative candidates are required to:

- Prepare the slab edges. (Rough-cut or Dowel Bar method)
- Check the sub-base
- Cut to size and fit slip membrane
- Lay & compact the correct strength of concrete
- Finish reinstatement surface in accordance with the requirements of the HAUC Specification
- Place curing membrane

In addition to the preparation of sub-base as outlined in previous units, the candidate will need to be conversant with the following sections of the HAUC Specification:

- Chapter 2. S2 Performance Requirements, pages 24 to 39
- Chapter 7. S7. Rigid and Modular Roads, sections
  - Section 7.1 Reinstatement methods, S7.1.1 to S7.1.4. Page 69
  - Section 7.2 Sub-base reinstatement, S7.2.1 to S7.3.5. Page 71
  - Section 7.3 Concrete road slab reinstatement S7.3.1 to S7.3.5 page 71-72
  - Section 7.5 Edge support preparation S7.5.1 to S7.5.12 pages 73-76
  - Section 7.6 Reinforcement. Pages 76-77
  - Section 7.7. S7.7.1 Overlays & S7.7.4 Surface Reinstatement. Page 78

### Unit 009 & 016 Reinstatement of Modular Surfaces & Concrete Footways

The practical exercise must be carried out in accordance with the HAUC Specification for the Reinstatement of Openings in the Highway, (4<sup>th</sup> Edition).

Candidates must be familiar with all aspects of excavation & reinstatement in the highway and **must** have received training on the use and safe operation of plant, tools and equipment, and understand the need to wear the appropriate Personal Protective equipment. Candidates must be aware of their responsibilities to look after themselves and others who may be affected by their actions and omissions at work.

Operative candidates are required to reinstate three areas that include a minimum of:

- 1.5m<sup>2</sup> for concrete paving slab repair
- 1.5m<sup>2</sup> for block paved repair
- 1.5m<sup>2</sup> for concrete footway repair

Candidates will need to be conversant with:

- Chapter 2. S2 Performance Requirements, pages 24 to 39
- Chapter 8. S8 Footways, Footpaths and Cycle Tracks. Pages 80 to 86
- Appendix A7.1 Flexible Footways, Footpaths & Cycle Tracks. Page 156
- Appendix A7.3 Rigid Footways, Footpaths & Cycle Tracks. Page 158
- Appendix A7.4 Modular Footways, Footpaths & Cycle Tracks. Page 159
- Appendix A12 reinstatement of Modular Surface Layers. Page 186

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### NRASW Candidate Preparatory Reading – Links

Avoiding danger From Underground Services HSG 47 – ISBN 978 0 7176 6584 6

<https://www.hse.gov.uk/pubns/books/hsg47.htm>

Volume 1: Street Works UK (formerly NJUG) Guidelines on the Positioning and Colour Coding of Underground Utilities' Apparatus

<http://streetworks.org.uk/resources/publications/>

Safety at Street Works and Road Works – A Code of Practice - ISBN 978 0 11 553145 3

<https://www.gov.uk/government/publications/safety-at-street-works-and-road-works>

Introduction to the Use of Portable Vehicular Signals – ISBN 978 0 11 553463 8

<https://www.gov.uk/government/publications/introduction-to-the-use-of-portable-vehicular-signals>

Specification for the Reinstatement of openings in Highways - Code of Practice - ISBN 978 0 11 553141 5

<https://www.gov.uk/government/publications/specification-for-the-reinstatement-of-openings-in-highways>

Health & Safety in Construction HSG 150 (Pages 70 – 77 Groundwork)

<https://www.hse.gov.uk/pubns/books/hsg150.htm>

#### Other Suggested Revision Material

Practical Guide to Street Works - ISBN 978-0-11-552746-3

<https://www.gov.uk/government/publications/street-works-best-practice>

We are finding this a brilliant study/revision aid for candidates.