Digital MCHW

Training for the Devolved Administrations

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29 April 2022

Agenda

1. Introduction
2. Future MCHW
3. Key drafting rules
4. National variations
5. Standards governance
6. Programme overview
7. Support and engagement activities
8. Closing remarks

Weekly Safety Pause

Making Safety Personal

WSP22 008 - February 2022

ZERO HARM

Home Working – Avoiding accidents in the home

Tips for keeping yourself safe whilst working from home:

Risk assessment – Spending time to look at your home working environment to identify and manage potential risks is the most important step to avoid accidents in the home. Areas to consider include:

- **Electrical equipment** – Visually check for damage to sockets, plugs and leads. Pay particular attention to avoid overloading extension leads and sockets.
- **Slips & Trips** – Keep your work area clear of obstructions, spillages and trailing wires.
- **Fire hazards** – Turn off electrical equipment when not in use and ensure good ventilation of equipment whilst in use. Do not leave naked flames such as candles unattended for any length of time. Keep flammable substances away from direct heat source or sunlight. Check fire alarms are functioning correctly and consider purchasing a small domestic powder fire extinguisher to use in emergency. *Recently, whilst working from home a colleague returned to their desk to find a lit scented tealight candle had melted cables on their headset and charred some paperwork.*
- **Substances** – Familiarise yourself with any new cleaning substances you may have purchased to be used in your home. Some cleaning products, for example, can cause skin and eye irritation if not used correctly.
- **Accidents & first aid** – Check your home first aid kit if you have one. Is it suitable and in good order? Are home medications in date? Have you considered the actions required in the event of an accident?
- **Display Screen Equipment (DSE)** – Spend time setting up your home workstation to ensure it is fit for purpose which allows you to work comfortably with out aches and pains.

1. Introduction

Objectives for today

- Provide on overview of the Future MCHW, including vision, programme, key drafting rules for Volumes 1,2,3, and for national variations.
- Refresh basic information on standards governance, your roles and responsibilities
- Explain support that will be provided throughout the drafting process.
- Collect questions from the audience.

Outcomes from today

- Understand the necessity for compliance with the new structure and style of Volumes 1,2,3.
- Understand the high-level principles behind the update of the MCHW and where to find detailed training material.
- Understand roles and responsibilities related to standards governance
- Be ready to start drafting.

Approach to online course delivery

- Combination of presentations and questions using Menti.
  - Please provide your answers to the questions asked during the presentation using Menti.

- Please post any questions or comments in the Teams chat box during the presentation.

The project team

National Highways

- Steve Davy, Project sponsor
- Gareth Smith, Project manager
- Simon Hartshorne, content specialist, EU legislation advisor
- Kate Albon, content specialist, advisor on contractual aspects
- Maurice Jones, content specialist

WSP

- Mariapia Angelino, trainer
- Content reviewers

Please go to Menti www.menti.com for testing

Code: 72 77 82 0

Feedback

https://survey.alchemer.eu/s3/90453096/MCHW-training-for-DAs-29-04-2022

2. Future MCHW

- Vision and recommendations
- New volume structure
- New clause style (SFR and SIs)
- New terminology

Vision

The future MCHW will provide
clear and unambiguous requirements and instructions,
compatible with modern contract forms and
future construction practices

The future MCHW will…

PURPOSE, SCOPE AND CONTENT
1. …continue to set out the requirements to be used for the United Kingdom **motorway and all-purpose trunk road network**.
2. …be **compatible** with the future DMRB.
3. …have content related to **conditions of contract removed**.
4. …be and remain up-to-date.
5. …**clearly define requirements** to be fulfilled by constructors.
FORMAT
6. …will provide **clear and easier to use instruction**s to contract compilers.
7. …enable **national variation** of MCHW clauses by Devolved Administrations or Highways England by introducing clauses in the main text.
8. …have a **consistent style and format**, and be intuitive to use.
9. …be **future-proofed** for advances in information technology.
ENABLING FUTURE (LONGER TERM) EFFICIENCIES
10. …be compatible with **future asset information strategies** and digital design, construction, operation and maintenance of roads.
11. …seek to implement more content developed in **partnership with others** and to refer to content published by other reputable bodies.
12. …not inhibit and will seek to **support trends in construction**.
13. …be **contract neutral** and compatible with conditions of contract used by Devolved Administrations and Highways England.
PROGRAMME DELIVERY
14. The **timing of work** on the update of the future MCHW will not overlap work on the DMRB update, whilst seeking to achieve efficiencies available from continuity of resourcing.
15. Create a community of document owners, supported by content specialists, to **strengthen collective commitment** to programme, derive efficiencies and ensure high quality drafting.

New volume structure

Current matrix of technical requirements

		Discipline								
		G	**L**	**C** (Civil Engineering)					**T** (Technology)	
		General Principles & Scheme Governance	Sustainability & Environment	Road Layout	Pavement	Highway Structures & Bridges	Drainage	Geotechnics	Control & Communications Technology	Road Lighting
Life-cycle stage		100 - 999	100 - 999	100 - 199	200 - 299	300 - 499	500 - 599	600 - 699	100 - 499	500 - 999
General Information	**G**	DMRB review programme – RIS 1								
Appraisal	**A**									
Design	**D**									
Construction(1)	**C**									
Maintenance & Operation(2)	**M**	DMRB review programme – RIS 1								
Inspection & Assessment	**S**									
Disposal	**Z**									

New matrix of technical requirements

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General Information	**G**	DMRB review programme – RIS 1								
Appraisal	**A**									
Design	**D**									
Contract preparation	**P**	Instruction for specifiers documents – RIS 2								
Construction(1)	**C**	Specification for Highways Works documents – RIS 2								
Maintenance & Operation(2)	**M**	DMRB review programme – RIS 1								
Inspection & Assessment	**S**									
Disposal	**Z**									

Current MCHW

Volume 0	Volume 1	Volume 2	Volume 3	Volume 4	Volume 5	Volume 6
Manual Contract Document for Major Works and Implementation Requirements	Specification for Highways Works	Notes for guidance	Highway Construction Details	Bill of quantities	Contract Documents for Specialist Activities	Requirements and advice relating to H&S legislation

Current MCHW

Volume 0
Manual Contract Document for Major Works and Implementation Requirements

Volume 1
Specification for Highways Works

Volume 2
Notes for guidance

Volume 3
Highway Construction Details

Volume 4
Bill of quantities

Volume 5
Contract Documents for Specialist Activities

Volume 6
Requirements and advice relating to H&S legislation

H&S documents

'Design' row

'Construction' row

New 'Contract preparation' row

Location TBC

Future MCHW

Specification for Highways Works (SHW) documents

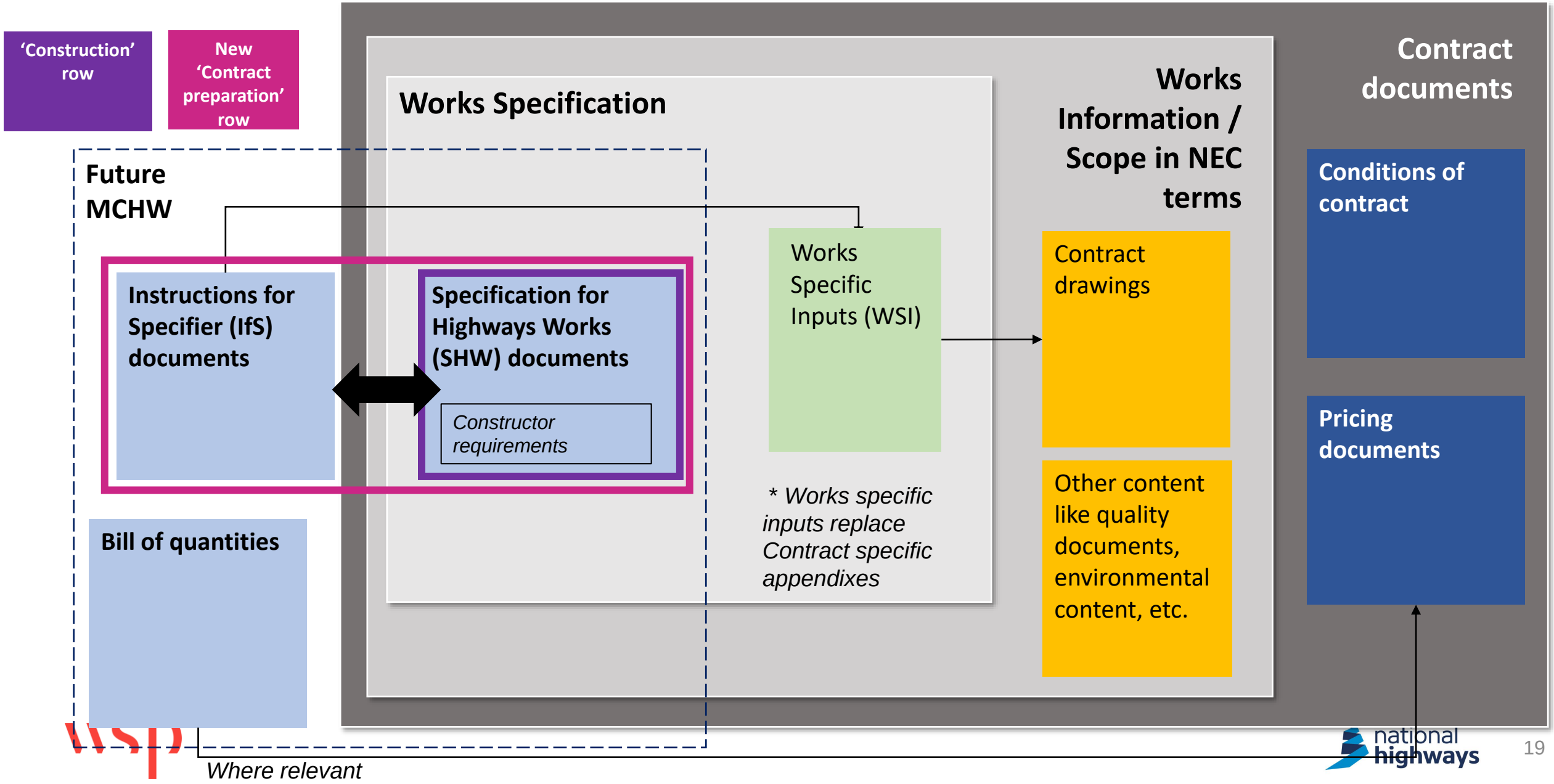
- Introductory content
- Core Requirements
- Nationally determined requirements / sections

Instructions for Specifier (IfS) documents

- Introductory content
- Core Instructions
- Nationally determined requirements / sections
- Sample appendices

Bill of quantities

Future MCHW and contract documents



New clause style

New content and presentation of SHW

4	Element
4.1	Elements shall be compliant with BS 2210.
4.2	The class shall be as stated in the works specific inputs.
4.3	The height of the element shall be a minimum of 500mm.

- SHW requirements will be split out.
- SHW requirements will only cover:
  1. products;
  2. materials;
  3. activities related to products and materials

New content and presentation of NfG (now IfS)

1	Element	
1.1	Elements shall be compliant with BS 2210.	Constructor requirements
1.2	The class shall be as stated in the works specific inputs.	
SI 1.2	Insert **X**, **Y** or **Z** to represent the class	Specifier instruction
1.3	The height of the element shall be a minimum of 500mm.	

- For ease of use by technical authors, SIs and SHW will be authored as one document
- For ease of use by specifiers, IfS documents shall be published with both:
  - the default set of constructor requirements of the SHW and,
  - the specifier instructions on providing the required works specific inputs related to the constructor requirements.

New content and presentation of contract specific appendices (now works specific inputs WSI)

- The works specific inputs (WSI) will replace the contract-specific appendices.

- Work has now started in TAGG to explore features of a tool that can generate the WSI schedules automatically (called '*specifier tool*').
  - The Specifier Tool will enforce consistent structure and quality assurance.
  - The development of specifications will be supported without the use of the Specifier Tool as well.
  - Devolved Administrations will be engaged once mock ups have been generated.

New terminology

Current MCHW	Future MCHW
‘Specification for Highway Works’ (SHW) series	‘Specification for Highway Works’ (SHW) documents
Requirements for constructors (in SHW)	Constructor requirements (in SHW)
‘Notes for Guidance’ (NfG) documents	‘Instructions for Specifier’ (IfS) documents
Guidance for contract compiler (in NfG)	As relevant: Design requirements / advice (in DMRB) Specifier instructions (in IfS) Constructor requirements (in SHW)
Contract specific appendixes (in NfG)	Works specific inputs (WSI)

Please go to Menti www.menti.com

Code: 72 77 82 0

3. Key drafting rules

- What a good spec looks like
- High-level drafting objectives
- Specific drafting rules (overview)

What a good spec looks like

Each section applies to a physical object

Consistent use of verb forms

Independent clauses, no ambiguity

Contract neutral clauses

Clear distinction between product and installation requirements for each physical object …

…which in turn helps make a clear distinction between verification requirements

Clear documentation requirements

WIDGETS

Product requirements

1.1 Widgets shall be compliant with BS EN 12345.

1.2 Widgets shall meet the following performance characteristics: <performance characte

1.3 Widgets shall also meet the performance characteristics stated in schedule WSI xx.

SI.1.3a Provide unique reference for each drawing.

SI.1.3b Select widget type from permitted options (type 1, type 2, type 3).

1.4 The ([declaration of performance]) in accordance with ([replacement for Clause 106]) shall apply to the use of widgets.

1.5 The design of <subject of design> shall be in accordance with <design standard reference>.

Product verification

1.5 Certification shall be supplied to demonstrate that the widgets comply with BS EN 12345.

Installation requirements

1.6 Widgets shall be installed in accordance with the manufacture instruction.

1.7 Records of the alignment check for widgets shall be submitted to the Overseeing Organisation.

Installation verification

1.8 The alignment of widgets shall be checked within 24 hours of installation.

Documentation requirements

1.9 The following documentation shall be submitted for widgets prior to the commencement of <details of the works>: <detail the documentation>.

1.10 Documentation for widgets shall be submitted at least four weeks prior to the commencement of <details of the works>.

1.11 The requirements for documentation ([replacement for Clause 104 and 105]) shall apply to widgets.

Clear instructions for the specifier directly linked with the relevant constructor requirement and easy to convert into WSI

Schedule A	
Drawing number	**Type**
[Unique reference]	[Type 1, Type 2, Type 3]

Clear distinction between design and construction requirements (with constructor design undertaken according to the DMRB as relevant)

Right balance between performance and method-based requirements

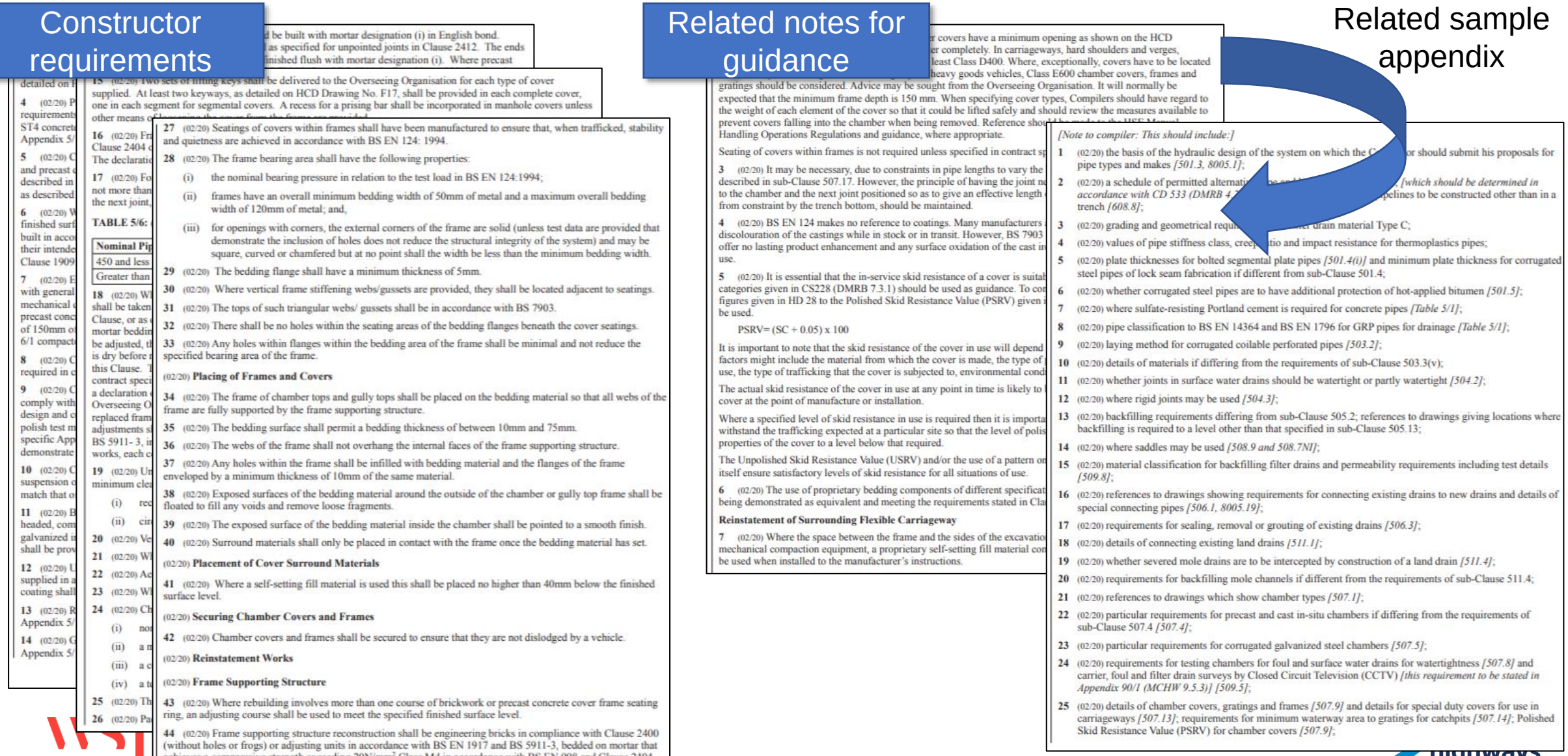
Use of standard format requirements

Where we are now

Constructor requirements

Related notes for guidance

Related sample appendix



be built with mortar designation (i) in English bond.
as specified for unpointed joints in Clause 2412. The ends
finished flush with mortar designation (i). Where precast

15 (02/20) Two sets of lifting keys shall be delivered to the Overseeing Organisation for each type of cover supplied. At least two keyways, as detailed on HCD Drawing No. F17, shall be provided in each complete cover, one in each segment for segmental covers. A recess for a prising bar shall be incorporated in manhole covers unless other means of

16 (02/20) Fra
Clause 2404
The declaratio

17 (02/20) Fo
not more than
the next joint,

TABLE 5/6:

Nominal Pip
450 and less
Greater than

18 (02/20) W
shall be taken
Clause, or as
mortar beddi
be adjusted, t
is dry before
this Clause.
contract speci
a declaration
Overseeing O
replaced fram
adjustments s
BS 5911- 3, i
works, each c

19 (02/20) Un
minimum clea
(i) rec
(ii) cir

20 (02/20) Ve
21 (02/20) W
22 (02/20) Ac
23 (02/20) W
24 (02/20) Ch
(i) no
(ii) a
(iii) a
(iv) a

25 (02/20) Th
26 (02/20) Pa

27 (02/20) Seatings of covers within frames shall have been manufactured to ensure that, when trafficked, stability and quietness are achieved in accordance with BS EN 124: 1994.

28 (02/20) The frame bearing area shall have the following properties:

(i) the nominal bearing pressure in relation to the test load in BS EN 124:1994;

(ii) frames have an overall minimum bedding width of 50mm of metal and a maximum overall bedding width of 120mm of metal; and,

(iii) for openings with corners, the external corners of the frame are solid (unless test data are provided that demonstrate the inclusion of holes does not reduce the structural integrity of the system) and may be square, curved or chamfered but at no point shall the width be less than the minimum bedding width.

29 (02/20) The bedding flange shall have a minimum thickness of 5mm.

30 (02/20) Where vertical frame stiffening webs/gussets are provided, they shall be located adjacent to seatings.

31 (02/20) The tops of such triangular webs/ gussets shall be in accordance with BS 7903.

32 (02/20) There shall be no holes within the seating areas of the bedding flanges beneath the cover seatings.

33 (02/20) Any holes within flanges within the bedding area of the frame shall be minimal and not reduce the specified bearing area of the frame.

(02/20) **Placing of Frames and Covers**

34 (02/20) The frame of chamber tops and gully tops shall be placed on the bedding material so that all webs of the frame are fully supported by the frame supporting structure.

35 (02/20) The bedding surface shall permit a bedding thickness of between 10mm and 75mm.

36 (02/20) The webs of the frame shall not overhang the internal faces of the frame supporting structure.

37 (02/20) Any holes within the frame shall be infilled with bedding material and the flanges of the frame enveloped by a minimum thickness of 10mm of the same material.

38 (02/20) Exposed surfaces of the bedding material around the outside of the chamber or gully top frame shall be floated to fill any voids and remove loose fragments.

39 (02/20) The exposed surface of the bedding material inside the chamber shall be pointed to a smooth finish.

40 (02/20) Surround materials shall only be placed in contact with the frame once the bedding material has set.

(02/20) **Placement of Cover Surround Materials**

41 (02/20) Where a self-setting fill material is used this shall be placed no higher than 40mm below the finished surface level.

(02/20) **Securing Chamber Covers and Frames**

42 (02/20) Chamber covers and frames shall be secured to ensure that they are not dislodged by a vehicle.

(02/20) **Reinstatement Works**

(02/20) **Frame Supporting Structure**

43 (02/20) Where rebuilding involves more than one course of brickwork or precast concrete cover frame seating ring, an adjusting course shall be used to meet the specified finished surface level.

44 (02/20) Frame supporting structure reconstruction shall be engineering bricks in compliance with Clause 2400 (without holes or frogs) or adjusting units in accordance with BS EN 1917 and BS 5911-3, bedded on mortar that achieves a compressive strength exceeding 20N/mm² Class Md in accordance with BS EN 998 and Clause 2404 before loading.

covers have a minimum opening as shown on the HCD
er completely. In carriageways, hard shoulders and verges,
least Class D400. Where, exceptionally, covers have to be located
heavy goods vehicles, Class E600 chamber covers, frames and
gratings should be considered. Advice may be sought from the Overseeing Organisation. It will normally be expected that the minimum frame depth is 150 mm. When specifying cover types, Compilers should have regard to the weight of each element of the cover so that it could be lifted safely and should review the measures available to prevent covers falling into the chamber when being removed. Reference shou
Handling Operations Regulations and guidance, where appropriate.

Seating of covers within frames is not required unless specified in contract sp

3 (02/20) It may be necessary, due to constraints in pipe lengths to vary the
described in sub-Clause 507.17. However, the principle of having the joint n
to the chamber and the next joint positioned so as to give an effective length
from constraint by the trench bottom, should be maintained.

4 (02/20) BS EN 124 makes no reference to coatings. Many manufacturers
discolouration of the castings while in stock or in transit. However, BS 7903
offer no lasting product enhancement and any surface oxidation of the cast ir
use.

5 (02/20) It is essential that the in-service skid resistance of a cover is suitab
categories given in CS228 (DMRB 7.3.1) should be used as guidance. To cor
figures given in HD 28 to the Polished Skid Resistance Value (PSRV) given i
be used.

PSRV= (SC + 0.05) x 100

It is important to note that the skid resistance of the cover in use will depend
factors might include the material from which the cover is made, the type of
use, the type of trafficking that the cover is subjected to, environmental condi

The actual skid resistance of the cover in use at any point in time is likely to
cover at the point of manufacture or installation.

Where a specified level of skid resistance in use is required then it is importa
withstand the trafficking expected at a particular site so that the level of polis
properties of the cover to a level below that required.

The Unpolished Skid Resistance Value (USRV) and/or the use of a pattern or
itself ensure satisfactory levels of skid resistance for all situations of use.

6 (02/20) The use of proprietary bedding components of different specificat
being demonstrated as equivalent and meeting the requirements stated in Cla

Reinstatement of Surrounding Flexible Carriageway

7 (02/20) Where the space between the frame and the sides of the excavatio
mechanical compaction equipment, a proprietary self-setting fill material cor
be used when installed to the manufacturer's instructions.

[Note to compiler: This should include:]

1 (02/20) the basis of the hydraulic design of the system on which the C or should submit his proposals for pipe types and makes *[501.3, 8005.1]*;

2 (02/20) a schedule of permitted alternati *[which should be determined in accordance with CD 533 (DMRB 4.*
pelines to be constructed other than in a trench *[608.8]*;

3 (02/20) grading and geometrical requi drain material Type C;

4 (02/20) values of pipe stiffness class, creep tio and impact resistance for thermoplastics pipes;

5 (02/20) plate thicknesses for bolted segmental plate pipes *[501.4(i)]* and minimum plate thickness for corrugated steel pipes of lock seam fabrication if different from sub-Clause 501.4;

6 (02/20) whether corrugated steel pipes are to have additional protection of hot-applied bitumen *[501.5]*;

7 (02/20) where sulfate-resisting Portland cement is required for concrete pipes *[Table 5/1]*;

8 (02/20) pipe classification to BS EN 14364 and BS EN 1796 for GRP pipes for drainage *[Table 5/1]*;

9 (02/20) laying method for corrugated coilable perforated pipes *[503.2]*;

10 (02/20) details of materials if differing from the requirements of sub-Clause 503.3(v);

11 (02/20) whether joints in surface water drains should be watertight or partly watertight *[504.2]*;

12 (02/20) where rigid joints may be used *[504.3]*;

13 (02/20) backfilling requirements differing from sub-Clause 505.2; references to drawings giving locations where backfilling is required to a level other than that specified in sub-Clause 505.13;

14 (02/20) where saddles may be used *[508.9 and 508.7NI]*;

15 (02/20) material classification for backfilling filter drains and permeability requirements including test details *[509.8]*;

16 (02/20) references to drawings showing requirements for connecting existing drains to new drains and details of special connecting pipes *[506.1, 8005.19]*;

17 (02/20) requirements for sealing, removal or grouting of existing drains *[506.3]*;

18 (02/20) details of connecting existing land drains *[511.1]*;

19 (02/20) whether severed mole drains are to be intercepted by construction of a land drain *[511.4]*;

20 (02/20) requirements for backfilling mole channels if different from the requirements of sub-Clause 511.4;

21 (02/20) references to drawings which show chamber types *[507.1]*;

22 (02/20) particular requirements for precast and cast in-situ chambers if differing from the requirements of sub-Clause 507.4 *[507.4]*;

23 (02/20) particular requirements for corrugated galvanized steel chambers *[507.5]*;

24 (02/20) requirements for testing chambers for foul and surface water drains for watertightness *[507.8]* and carrier, foul and filter drain surveys by Closed Circuit Television (CCTV) *[this requirement to be stated in Appendix 90/1 (MCHW 9.5.3)] [509.5]*;

25 (02/20) details of chamber covers, gratings and frames *[507.9]* and details for special duty covers for use in carriageways *[507.13]*; requirements for minimum waterway area to gratings for catchpits *[507.14]*; Polished Skid Resistance Value (PSRV) for chamber covers *[507.9]*;

High-level drafting objectives

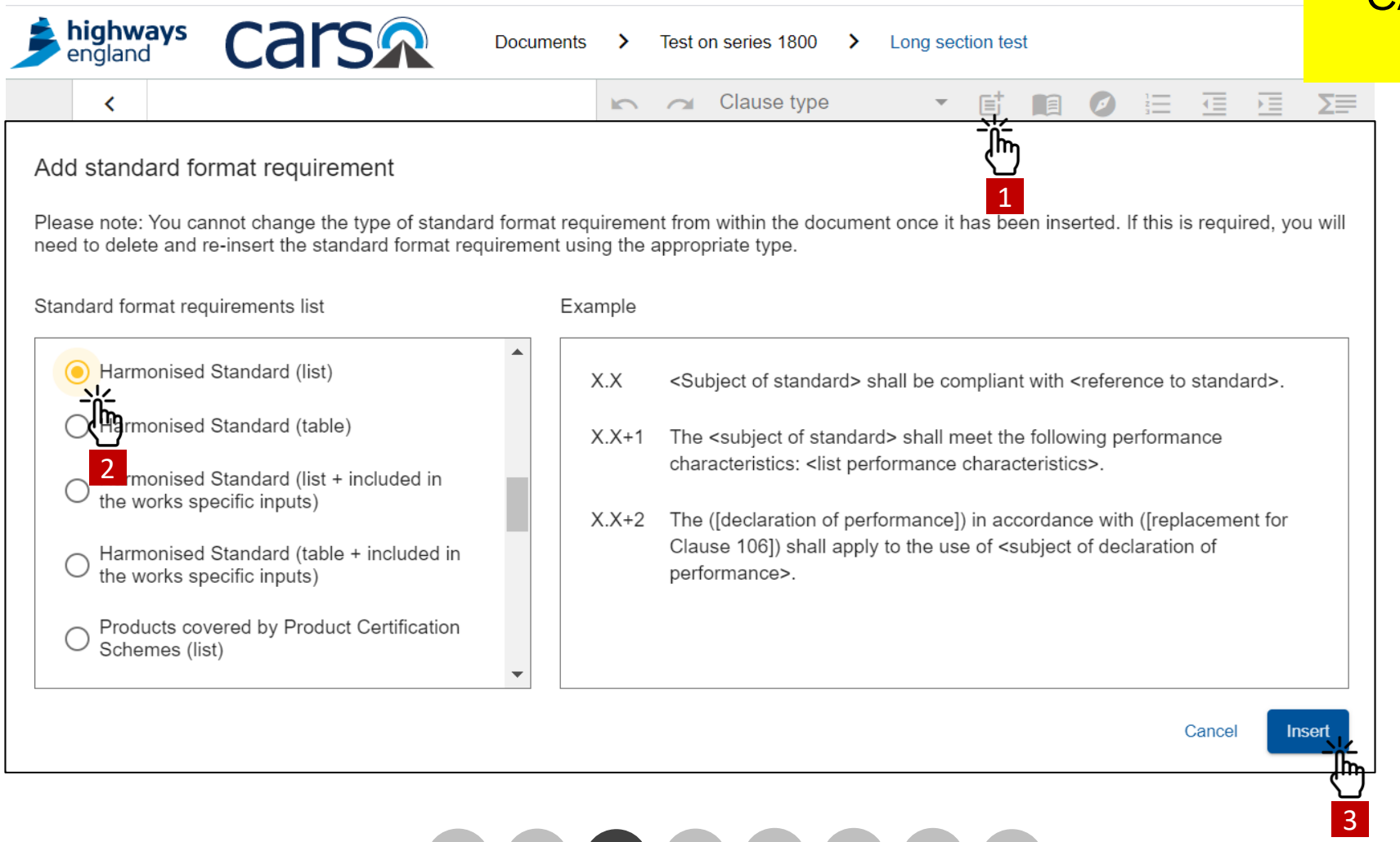
A. Setting **clear requirements** to the constructor in the SHW, including clear links with the DMRB
B. Setting **clear instructions** to the specifier in the IfS documents and clear links with the work specific inputs (WSI)
C. Setting **contract neutral requirements** to the constructor in the SHW
D. Present **national variations** consistently for the four Overseeing Organisations
E. Supporting **decarbonisation**

Attend training on specific drafting rules (Vol 1&2)

High-level drafting objectives	Specific drafting rules
Setting clear requirements to the constructor in the SHW, including clear links with the DMRB	A1: Verb forms A2: Clarity of constructor requirements A3: Section title and cross references **A4: Using standard format requirements (SFR)** A5: Product and installation requirements
	A6: Verification and documentation requirements A7: Other types of constructor requirements A8: Construction vs design requirements A9: Performance and method requirements
Setting clear instructions to the specifier in the IfS documents and clear links with the WSI	B1: IfS content, presentation and format B2: Establishing clear links between SHW, IfS and WSI
Setting contract neutral requirements to the constructor in the SHW	C1: Contract and product neutrality
Present national variations clearly and consistently	**D1: Nationally Determined Requirements and sections**
Supporting decarbonisation	*Specific rules to be provided*

Standard format requirements (SFR)

Use SFR when available on CARS



4. National variations

- Examples of national variations
- Approach to review current national variations
- Nationally Determined Requirements
- Nationally Determined Sections

Example of national variations

Different regulation

HE (main text)

3 (02/16) Unacceptable material Class U2 shall be:

(i) hazardous waste (as defined in the Hazardous Waste (England and Wales) Regulations 2005) and radioactive waste (as defined in the Radioactive Substances Act 1993).

4 (02/16) Where required in contract specific Appendix 6/1, unacceptable material (other than Class U2) shall be processed by mechanical, chemical or other means to render the material acceptable for use in the permanent works in accordance with the requirements of Table 6/1 and contract specific Appendix 6/1.

(02/16) **Definitions**

5 (02/16) Where source codes are referred to these shall be for materials from the sources listed in Table 6/7.

6 (02/16) Chalk shall mean:

(i) any porous material of natural origin composed essentially of calcium carbonate and identified as chalk on the maps produced by the British Geological Survey;

(ii) material designated as Class 3 in contract specific Appendix 6/1.

7 (02/16) Argillaceous rock shall mean shales mudstones siltstones slates and micaceous schists composed of particles of clay and silt and mica. It shall include unburnt colliery spoil. Where argillaceous rock is imported onto the site, it shall be aggregate complying with BS EN 13242 from source codes P (natural aggregates described as shale, siltstone or slate), or G2 (refuse from hard coal mining (black coal shale)).

8 (02/16) Pulverised-fuel ash shall mean solid material extracted by electrostatic and mechanical means from the flue gases of furnaces fired with pulverised bituminous coal. It shall have a maximum particle size of 3 mm. Where pulverised-fuel ash is imported onto the site, it shall be aggregate complying with BS EN 13242 from source code C1 (coal fly ash).

9 (02/16) Furnace bottom ash shall mean agglomerated pulverised-fuel ash obtained from the bottom of the power station furnace and having particle size no larger than 10 mm. Where furnace bottom ash is imported onto the site, it shall be aggregate complying with BS EN 13242 from source code C4 (coal bottom ash).

10 (02/16) Formation shall be the top surface of capping. Where no capping is required formation shall be the top surface of earthworks at the underside of sub-base, unless otherwise shown on the drawings.

11 (02/16) Sub-formation shall be the top surface of earthworks at the underside of capping.

12 (02/16) Stabilisation shall mean the spreading of cement or lime or both on a layer of deposited or intact granular or cohesive material, and the subsequent process of pulverising and mixing followed by appropriate compaction to form the whole or a constituent layer of a capping.

13 (02/16) Where 'recycled aggregate' is used in this Series, the material shall be aggregate resulting from the processing of inorganic or mineral material previously used in construction and shall have been tested in accordance with Clause 710. It shall not contain more than 1% other materials (Class X), not more than 50% in Class Ra (bituminous materials) and not more than 25% in Class Rg (crushed glass). Where 'recycled aggregate' is imported onto the site, it shall be aggregate complying with BS EN 13242 from source code A (construction and demolition recycling industries).

Where 'recycled aggregate except recycled asphalt' is used in this Series, the aggregate shall have been tested in accordance with Clause 710. It shall not contain more than 1% other materials (Class X), not more than 1% in Class Ra (bituminous materials) and not more than 5% in Class Rg (crushed glass). Where 'recycled aggregate except recycled asphalt' is imported onto the site, it shall be aggregate complying with BS EN 13242 from source codes A2 (crushed concrete) and/or A3 (crushed bricks, masonry).

14 (02/16) 'As dug' shall mean material that has been excavated, transported and placed without any processing. Where imported material undergoes any processing, including cleaning and sorting, it will not be deemed 'as dug' and thus shall be aggregate complying with BS EN 13242.

TS

3 (02/16) Unacceptable material Class U2 shall be:

(i) special waste (as defined in the Special Waste Scotland (Amendment) Regulations 2004) and radioactive waste (as defined in the Radioactive Substances Act 1993).

4 (02/16) Where required in contract specific Appendix 6/1, unacceptable material (other than Class U2) shall be processed by mechanical, chemical or other means to render the material acceptable for use in the permanent works in accordance with the requirements of Table 6/1 and contract specific Appendix 6/1.

(02/16) **Definitions**

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(ii) material designated as Class 3 in contract specific Appendix 6/1.

7 (02/16) Argillaceous rock shall mean shales mudstones siltstones slates and micaceous schists composed of particles of clay and silt and mica. It shall include unburnt colliery spoil. Where argillaceous rock is imported onto the site, it shall be aggregate complying with BS EN 13242 from source codes P (natural aggregates described as shale, siltstone or slate), or G2 (refuse from hard coal mining (black coal shale)).

8 (02/16) Pulverised-fuel ash shall mean solid material extracted by electrostatic and mechanical means from the flue gases of furnaces fired with pulverised bituminous coal. It shall have a maximum particle size of 3 mm. Where pulverised-fuel ash is imported onto the site, it shall be aggregate complying with BS EN 13242 from source code C1 (coal fly ash).

9 (02/16) Furnace bottom ash shall mean agglomerated pulverised-fuel ash obtained from the bottom of the power station furnace and having particle size no larger than 10 mm. Where furnace bottom ash is imported onto the site, it shall be aggregate complying with BS EN 13242 from source code C4 (coal bottom ash).

10 (02/16) Formation shall be the top surface of capping. Where no capping is required formation shall be the top surface of earthworks at the underside of sub-base, unless otherwise shown on the drawings.

11 (02/16) Sub-formation shall be the top surface of earthworks at the underside of capping.

12 (02/16) Stabilisation shall mean the spreading of cement or lime or both on a layer of deposited or intact granular or cohesive material, and the subsequent process of pulverising and mixing followed by appropriate compaction to form the whole or a constituent layer of a capping.

13 (02/16) Where 'recycled aggregate' is used in this Series, the material shall be aggregate resulting from the processing of inorganic or mineral material previously used in construction and shall have been tested in accordance with Clause 710. It shall not contain more than 1% other materials (Class X), not more than 50% in Class Ra (bituminous materials) and not more than 25% in Class Rg (crushed glass). Where 'recycled aggregate' is imported onto the site, it shall be aggregate complying with BS EN 13242 from source code A (construction and demolition recycling industries).

Where 'recycled aggregate except recycled asphalt' is used in this Series, the aggregate shall have been tested in accordance with Clause 710. It shall not contain more than 1% other materials (Class X), not more than 1% in Class Ra (bituminous materials) and not more than 5% in Class Rg (crushed glass). Where 'recycled aggregate except recycled asphalt' is imported onto the site, it shall be aggregate complying with BS EN 13242 from source codes A2 (crushed concrete) and/or A3 (crushed bricks, masonry).

14 (02/16) 'As dug' shall mean material that has been excavated, transported and placed without any processing. Where imported material undergoes any processing, including cleaning and sorting, it will not be deemed 'as dug' and thus shall be aggregate complying with BS EN 13242.

WG

3 (02/16) Unacceptable material Class U2 shall be:

(i) hazardous waste (as defined in the Hazardous Waste (England and Wales) Regulations 2005) and radioactive waste (as defined in the Radioactive Substances Act 1993).

4 (02/16) Where required in contract specific Appendix 6/1, unacceptable material (other than Class U2) shall be processed by mechanical, chemical or other means to render the material acceptable for use in the permanent works in accordance with the requirements of Table 6/1 and contract specific Appendix 6/1.

(02/16) **Definitions**

5 (02/16) Where source codes are referred to these shall be for materials from the sources listed in Table 6/7.

6 (02/16) Chalk shall mean:

(i) any porous material of natural origin composed essentially of calcium carbonate and identified as chalk on the maps produced by the British Geological Survey;

(ii) material designated as Class 3 in contract specific Appendix 6/1.

7 (02/16) Argillaceous rock shall mean shales mudstones siltstones slates and micaceous schists composed of particles of clay silt and mica. It shall include unburnt colliery spoil. Where argillaceous rock is imported onto the site, it shall be aggregate complying with BS EN 13242 from source codes P (natural aggregates described as shale, siltstone or slate), or G2 (refuse from hard coal mining (black coal shale)). See sub-Clause 21.

8 (02/16) Pulverised-fuel ash shall mean solid material extracted by electrostatic and mechanical means from the flue gases of furnaces fired with pulverised bituminous coal. It shall have a maximum particle size of 3 mm. Where pulverised-fuel ash is imported onto the site, it shall be aggregate complying with BS EN 13242 from source code C1 (coal fly ash).

9 (02/16) Furnace bottom ash shall mean agglomerated pulverised-fuel ash obtained from the bottom of the power station furnace and having particle size no larger than 10 mm. Where furnace bottom ash is imported onto the site, it shall be aggregate complying with BS EN 13242 from source code C4 (coal bottom ash).

10 (02/16) Formation shall be the top surface of capping. Where no capping is required formation shall be the top surface of earthworks at the underside of sub-base, unless otherwise shown on the drawings.

11 (02/16) Sub-formation shall be the top surface of earthworks at the underside of capping.

12 (02/16) Stabilisation shall mean the spreading of cement or lime or both on a layer of deposited or intact granular or cohesive material, and the subsequent process of pulverising and mixing followed by appropriate compaction to form the whole or a constituent layer of a capping.

13 (02/16) Where 'recycled aggregate' is used in this Series, the material shall be aggregate resulting from the processing of inorganic or mineral material previously used in construction and shall have been tested in accordance with Clause 710. It shall not contain more than 1% other materials (Class X), not more than 50% in Class Ra (bituminous materials) and not more than 25% in Class Rg (crushed glass). Where 'recycled aggregate' is imported onto the site, it shall be aggregate complying with BS EN 13242 from source code A (construction and demolition recycling industries).

Where 'recycled aggregate except recycled asphalt' is used in this Series, the aggregate shall have been tested in accordance with Clause 710. It shall not contain more than 1% other materials (Class X), not more than 1% in Class Ra (bituminous materials) and not more than 5% in Class Rg (crushed glass). Where 'recycled aggregate except recycled asphalt' is imported onto the site, it shall be aggregate complying with BS EN 13242 from source codes A2 (crushed concrete) and/or A3 (crushed bricks, masonry).

14 (02/16) 'As dug' shall mean material that has been excavated, transported and placed without any processing. Where imported material undergoes any processing, including cleaning and sorting, it will not be deemed 'as dug' and thus shall be aggregate complying with BS EN 13242.

NI

3 (02/16) Unacceptable material Class U2 shall be:

(i) hazardous waste (as defined in the Hazardous Waste Regulations (Northern Ireland) 2005) and radioactive waste (as defined in the Radioactive Substances Act 1993).

4 (02/16) Where required in contract specific Appendix 6/1 unacceptable material (other than Class U2) shall be processed by mechanical, chemical or other means to render the material acceptable for use in the permanent works in accordance with the requirements of Table 6/1 and the contract specific Appendix 6/1.

(02/16) **Definitions**

5 (02/16) Where source codes are referred to these shall be for materials from the sources listed in Table 6/7.

6 (02/16) Chalk shall mean:

(i) any porous material of natural origin composed essentially of calcium carbonate and identified as chalk on the maps produced by the Geological Survey of Northern Ireland;

(ii) material designated as Class 3 in contract specific Appendix 6/1.

7 (02/16) Argillaceous rock shall mean shales mudstones siltstones slates and micaceous schists composed of particles of clay silt and mica. It shall include unburnt colliery spoil. Where argillaceous rock is imported onto the site, it shall be aggregate complying with BS EN 13242 from source codes P (natural aggregates described as shale, siltstone or slate), or G2 (refuse from hard coal mining (black coal shale)).

8 (02/16) Pulverised-fuel ash shall mean solid material extracted by electrostatic and mechanical means from the flue gases of furnaces fired with pulverised bituminous coal. It shall have a maximum particle size of 3 mm. Where pulverised-fuel ash is imported onto the site, it shall be aggregate complying with BS EN 13242 from source code C1 (coal fly ash).

9 (02/16) Furnace bottom ash shall mean agglomerated pulverised-fuel ash obtained from the bottom of the power station furnace and having particle size no larger than 10 mm. Where furnace bottom ash is imported onto the site, it shall be aggregate complying with BS EN 13242 from source code C4 (coal bottom ash).

10 (02/16) Formation shall be the top surface of capping.

Where no capping is required formation shall be the top surface of earthworks at the underside of sub-base, unless otherwise shown on the drawings.

11 (02/16) Sub-formation shall be the top surface of earthworks at the underside of capping.

12 (02/16) Stabilisation shall mean the spreading of cement or lime or both on a layer of deposited or intact granular or cohesive material, and the subsequent process of pulverising and mixing followed by appropriate compaction to form the whole or a constituent layer of a capping.

13 (02/16) Where 'recycled aggregate' is used in this Series, the material shall be aggregate resulting from the processing of inorganic or mineral material previously used in construction and shall have been tested in accordance with Clause 710. It shall not contain more than 1% other materials (Class X), not more than 50% in Class Ra (bituminous materials) and not more than 25% in Class Rg (crushed glass). Where 'recycled aggregate' is imported onto the site, it shall be aggregate complying with BS EN 13242 from source code A (construction and demolition recycling industries).

Where 'recycled aggregate except recycled asphalt' is used in this Series, the aggregate shall have been tested in accordance with Clause 710. It shall not contain more than 1% other materials (Class X), not more than 1% in Class Ra (bituminous materials) and not more than 5% in Class Rg (crushed glass). Where 'recycled aggregate except recycled asphalt' is imported onto the site, it shall be aggregate complying with BS EN 13242 from source codes A2 (crushed concrete) and/or A3 (crushed bricks, masonry).

14 (02/16) 'As dug' shall mean material that has been excavated, transported and placed without any processing. Where imported material undergoes any processing, including cleaning and sorting, it will not be deemed 'as dug' and thus shall be aggregate complying with BS EN 13242.

Example of national variations

Additional requirement

HE (main text)

(02/16) **Use of Fill Materials**

15 (02/16) In addition to any grading requirements the maximum particle size of any fill material shall be no more than two-thirds of the compacted layer thickness except that cobbles having an equivalent diameter of more than 150 mm shall not be deposited beneath verges or central reserves within 1.30 m of the finished surface.

16 (02/16) Materials placed within 500 mm, or any other distances described in the contract specific Appendix 6/3, of concrete, cement bound materials, other cementitious mixtures or stabilised capping forming part of the permanent works shall conform to, as appropriate, the following requirements:

(i) Materials shall conform to the following criteria:

(a) Water-soluble sulfate (WS) content determined in accordance with BS EN 1744-1 clause 10 shall not exceed 1500 mg of sulfate (as SO_4) per litre;

(b) Total sulfur (TS) content determined in accordance with BS EN 1744-1 clause 11 expressed as (S) shall not exceed 1% for aggregates other than air cooled blast furnace slag or 2% for air cooled blast furnace slag.

(ii) Materials shall conform to at least one of the following options:

(a) When described in accordance with BS EN 932-3 and BS EN 13242 Annex A, limestone, chalk, dolomite, blast furnace slag, steel slag or crushed concrete are predominant

or

(b) The sulfide content of the material determined in accordance with BS EN 1744-1 Clause 13 is less than 0.5% (as SO_4).

When determining WS, TS or sulfide content, at least five samples of each material shall be tested. The mean of the highest two values shall be used for comparison with the limiting values. This shall also apply if six to nine results are available. If ten or more results are available, the mean of the highest 20% of the results shall be used for comparison with the limiting values.

17 (02/16) Material placed within 500mm, or any other distances described in the contract specific Appendix 6/3, of metallic structural elements forming part of the permanent works shall conform, as appropriate, to the following requirements:

(i) Materials shall conform to the following criteria:

(a) Water-soluble sulfate (WS) content determined in accordance with BS EN 1744-1 clause 10 shall not exceed 300 mg of sulfate (as SO_4) per litre; and

(b) Total sulfur (TS) content determined in accordance with BS EN 1744-1 clause 11 expressed as (S) shall not exceed 1% for aggregates other than air cooled blast furnace slag or 2% for air cooled blast furnace slag.

(ii) Materials shall conform to at least one of the following options:

(a) When described in accordance with BS EN 932-3 and BS EN 13242 Annex A, limestone, chalk, dolomite, blast furnace slag, steel slag or crushed concrete are predominant;

or

(b) The sulfide content of the material determined in accordance with BS EN 1744-1 Clause 13 is less than 0.06% (as SO_4).

When determining WS, TS or sulfide content, at least five samples of each material shall be tested. The mean of the highest two values shall be used for comparison with the limiting values. This shall also apply if six to nine results are available. If ten or more results are available, the mean of the highest 20% of the results shall be used for comparison with the limiting values.

The requirements in (i) and (ii) above shall not apply to metallic items protected by concrete or ancillary metallic items such as the tops of chambers and gullies.

18 (02/16) Unburnt colliery spoil may be used as general fill provided it is compacted in compliance with Clause 612 and complies with the requirements of contract specific Appendix 6/1.

19 (02/16) Pulverised-fuel ash shall not be placed within the dimension described in contract specific Appendix 6/3, below sub-formation or formation.

20 (02/16) Where pulverised-fuel ash is used, the Contractor shall for each consignment, make available to the Overseeing Organisation a record of the type and source from which it was obtained and a certificate of results of tests showing that the material complies with the requirements of Table 6/1.

TS

(02/16) **Use of Fill Materials**

15 (02/16) In addition to any grading requirements the maximum particle size of any fill material shall be no more than two-thirds of the compacted layer thickness except that cobbles having an equivalent diameter of more than 150 mm shall not be deposited beneath verges or central reserves within 1.30 m of the finished surface.

16 (02/16) Material placed within 500 mm, or any other distances described in contract specific Appendix 6/3, of concrete, cement bound materials, other cementitious materials or stabilised capping forming part of the permanent works shall conform to, as appropriate, the following requirements.

(i) Materials shall conform to the following criteria:

(a) Water-soluble sulfate (WS) content determined in accordance with BS EN 1744-1 clause 10 shall not exceed 1500 mg of sulfate (as SO_4) per litre;

(b) Total sulfur (TS) content determined in accordance with BS EN 1744-1 clause 11 expressed as (S) shall not exceed 1% for aggregates other than air cooled blast furnace slag or 2% for air cooled blast furnace slag.

(ii) Materials shall conform to at least one of the following options:

(a) When described in accordance with BS EN 932-3 and BS EN 13242 Annex A, limestone, chalk, dolomite, blast furnace slag, steel slag or crushed concrete are predominant

or

(b) The sulfide content of the mixture determined in accordance with BS EN 1744-1 Clause 13 is less than 0.5% (as SO_4).

When determining WS, TS or sulfide content, at least five samples of each material shall be tested. The mean of the highest two values shall be used for comparison with the limiting values. This shall also apply if six to nine results are available. If ten or more results are available, the mean of the highest 20% of the results shall be used for comparison with the limiting values.

17 (02/16) Material placed within 500 mm, or any other distances described in contract specific Appendix 6/3, of metallic structural elements forming part of the permanent works shall conform, as appropriate, to the following requirements.

(i) Materials shall conform to the following criteria:

(a) Water-soluble sulfate (WS) content determined in accordance with BS EN 1744-1 clause 10 shall not exceed 300 mg of sulfate (as SO_4) per litre; and

(b) Total sulfur (TS) content determined in accordance with BS EN 1744-1 clause 11 expressed as (S) shall not exceed 1% for aggregates other than air cooled blast furnace slag or 2% for air cooled blast furnace slag.

(ii) Materials shall conform to at least one of the following options:

(a) When described in accordance with BS EN 932-3 and BS EN 13242 Annex A, limestone, chalk, dolomite, blast furnace slag, steel slag or crushed concrete are predominant;

or

(b) The sulfide content of the mixture determined in accordance with BS EN 1744-1 Clause 13 is less than 0.06% (as SO_4).

When determining WS, TS or sulfide content, at least five samples of each material shall be tested. The mean of the highest two values shall be used for comparison with the limiting values. This shall also applies apply if six to nine results are available. If ten or more results are available, the mean of the highest 20% of the results shall be used for comparison with the limiting values.

The requirements in (i) and (ii) above shall not apply to metallic elements protected by concrete or ancillary metallic items such as the tops of chambers and gullies.

18 (02/16) Unburnt colliery spoil may be used as general fill provided it is compacted in compliance with Clause 612 and complies with the requirements of contract specific Appendix 6/1.

19 (02/16) Pulverised-fuel ash shall not be placed within the dimension described in contract specific Appendix 6/3, below sub-formation or formation.

20 (02/16) Where pulverised-fuel ash is used, the Contractor shall for each consignment, make available to the Overseeing Organisation a record of the type and source from which it was obtained and a certificate of results of tests showing that the material complies with the requirements of Table 6/1.

WG

(02/16) **Use of Fill Materials**

15 (02/16) In addition to any grading requirements the maximum particle size of any fill material shall be no more than two-thirds of the compacted layer thickness except that cobbles having an equivalent diameter of more than 150 mm shall not be deposited beneath verges or central reserves within 1.30 m of the finished surface.

16 (02/16) Materials placed within 500 mm, or any other distances described in the contract specific Appendix 6/3, of concrete, cement bound materials, other cementitious mixtures or stabilised capping forming part of the permanent works shall conform to, as appropriate, the following requirements:

(i) Materials shall conform to the following criteria:

(a) Water-soluble sulfate (WS) content determined in accordance with BS EN 1744-1 clause 10 shall not exceed 1500 mg of sulfate (as SO_4) per litre;

(b) Total sulfur (TS) content determined in accordance with BS EN 1744-1 clause 11 expressed as (S) shall not exceed 1% for aggregates other than air cooled blast furnace slag or 2% for air cooled blast furnace slag.

(ii) Materials shall conform to at least one of the following options:

(a) When described in accordance with BS EN 932-3 and BS EN 13242 Annex A, limestone, chalk, dolomite, blast furnace slag, steel slag or crushed concrete are predominant

or

(b) The sulfide content of the material determined in accordance with BS EN 1744-1 Clause 13 is less than 0.5% (as SO_4).

When determining WS, TS or sulfide content, at least five samples of each material shall be tested. The mean of the highest two values shall be used for comparison with the limiting values. This shall also apply if six to nine results are available. If ten or more results are available, the mean of the highest 20% of the results shall be used for comparison with the limiting values.

17 (02/16) Material placed within 500mm, or any other distances described in the contract specific Appendix 6/3, of metallic structural elements forming part of the permanent works shall conform, as appropriate, to the following requirements:

(i) Materials shall conform to the following criteria:

(a) Water-soluble sulfate (WS) content determined in accordance with BS EN 1744-1 clause 10 shall not exceed 300 mg of sulfate (as SO_4) per litre; and

(b) Total sulfur (TS) content determined in accordance with BS EN 1744-1 clause 11 expressed as (S) shall not exceed 1% for aggregates other than air cooled blast furnace slag or 2% for air cooled blast furnace slag.

(ii) Materials shall conform to at least one of the following options:

(a) When described in accordance with BS EN 932-3 and BS EN 13242 Annex A, limestone, chalk, dolomite, blast furnace slag, steel slag or crushed concrete are predominant;

or

(b) The sulfide content of the material determined in accordance with BS EN 1744-1 Clause 13 is less than 0.06% (as SO_4).

When determining WS, TS or sulfide content, at least five samples of each material shall be tested. The mean of the highest two values shall be used for comparison with the limiting values. This shall also apply if six to nine results are available. If ten or more results are available, the mean of the highest 20% of the results shall be used for comparison with the limiting values.

The requirements in (i) and (ii) above shall not apply to metallic items protected by concrete or ancillary metallic items such as the tops of chambers and gullies.

18 (02/16) Unburnt colliery spoil may be used as general fill provided it is compacted in compliance with Clause 612 and complies with the requirements of contract specific Appendix 6/1.

19 (02/16) Pulverised-fuel ash shall not be placed within the dimension described in contract specific Appendix 6/3, below sub-formation or formation.

20 (02/16) Where pulverised-fuel ash is used, the Contractor shall for each consignment, make available to the Overseeing Organisation a record of the type and source from which it was obtained and a certificate of results of tests showing that the material complies with the requirements of Table 6/1.

21 (02/16) Where stated in contract specific Appendix 6/1 permissible options for fill materials shall include slate or other argillaceous rock materials as stated.

NI

(02/16) **Use of Fill Materials**

15 (02/16) In addition to any grading requirements the maximum particle size of any fill material shall be no more than two-thirds of the compacted layer thickness except that cobbles having an equivalent diameter of more than 150 mm shall not be deposited beneath verges or central reserves within 1.30 m of the finished surface.

16 (02/16) Materials placed within 500 mm, or any other distances described in contract specific Appendix 6/3, of concrete, cement bound materials, other cementitious materials or stabilised capping forming part of the permanent works shall conform to, as appropriate, the following requirements:

(i) Materials shall conform to the following criteria:

(a) Water-soluble sulfate (WS) content determined in accordance with BS EN 1744-1 clause 10 shall not exceed 1500 mg of sulfate (as SO_4) per litre;

(b) Total sulfur (TS) content determined in accordance with BS EN 1744-1 clause 11 expressed as (S) shall not exceed 1% for aggregates other than air cooled blast furnace slag or 2% for air cooled blast furnace slag.

(ii) Marerials shall conform to at least one of the following options:

(a) When described in accordance with BS EN 932-3 and BS EN 13242 Annex A, limestone, chalk, dolomite, blast furnace slag, steel slag or crushed concrete are predominant

or

(b) The sulfide content of the mixture determined in accordance with BS EN 1744-1 Clause 13 is less than 0.5% (as SO_4).

When determining WS, TS or sulfide content, at least five samples of each material shall be tested. The mean of the highest two values shall be used for comparison with the limiting values. This shall also apply if six to nine results are available. If ten or more results are available, the mean of the highest 20% of the results shall be used for comparison with the limiting values.

17 (02/16) Material placed within 500 mm, or any other distances described in contract specific Appendix 6/3, of metallic structural elements forming part of the permanent works shall conform, as appropriate, to the following requirements.

(i) Materials shall conform to the following criteria:

(a) Water-soluble sulfate (WS) content determined in accordance with BS EN 1744-1 clause 10 shall not exceed 300 mg of sulfate (as SO_4) per litre; and

(b) Total sulfur (TS) content determined in accordance with BS EN 1744-1 clause 11 expressed as (S) shall not exceed 1% for aggregates other than air cooled blast furnace slag or 2% for air cooled blast furnace slag.

(ii) Materials shall conform to at least one of the following options:

(a) When described in accordance with BS EN 932-3 and BS EN 13242 Annex A, limestone, chalk, dolomite, blast furnace slag, steel slag or crushed concrete are predominant;

or

(b) The sulfide content of the mixture determined in accordance with BS EN 1744-1 Clause 13 is less than 0.06% (as SO_4).

When determining WS, TS or sulfide content, at least five samples of each material shall be tested. The mean of the highest two values shall be used for comparison with the limiting values. This shall also applies apply if six to nine results are available. If ten or more results are available, the mean of the highest 20% of the results shall be used for comparison with the limiting values.

The requirements in (i) and (ii) above shall not apply to metallic elements protected by concrete or ancillary metallic items such as the tops of chambers and gullies.

18 (02/16) Unburnt colliery spoil may be used as general fill provided it is compacted in compliance with Clause 612 and complies with the requirements of contract specific Appendix 6/1.

19 (02/16) Pulverised-fuel ash shall not be placed within the dimension described in contract specific Appendix 6/3, below sub-formation or formation.

20 (02/16) Where pulverised-fuel ash is used, the Contractor shall for each consignment make available to the Overseeing Organisation a record of the type and source from which it was obtained and a certificate of results of tests showing that the material complies with the requirements of Table 6/1.

Example of national variations

Different regulations

HE (main text)

#1212 (05/01) **Road Markings**

General

1 (08/03) Road markings shall be white or yellow (Classes Y1 and Y2) complying with BS EN 1436 Table 6, as appropriate except where an alternative shade has been specified in Appendix 12/3. The markings shall consist of continuous or intermittent lines, letters, figures, arrows or symbols and comply with sub-Clauses 2 to 12 of this Clause.

Statutory requirements controlling road markings are contained in The Traffic Signs Regulations and General Directions 2002 (Statutory Instrument 2002 No. 3113) and subsequent amending Regulations.

Permanent Road Markings

2 (11/07) Permanent road markings shall be one of the following materials and comply with the colour, location and material type requirements described in Appendix 12/3:

(i) thermoplastic road marking material or paint in accordance with BS EN 1871;

(ii) permanent preformed road markings in accordance with BS EN 1790;

(iii) other materials as described in Appendix 12/3.

They shall be also tested in road trials to the Roll-over class P5 in accordance with the procedure stated in BS EN 1824 to demonstrate compliance with the performance requirements as stated in sub-Clauses 3 to 6. The test report shall give particulars of the quality and quantity of the material, including drop on glass beads laid at the test site for future reference and comparison purposes should such a need arise.

3 Road markings shall have the following road performance as defined in BS EN 1436 for the period of the functional life starting from the date of application or when the road is trafficked, whichever is later. The materials to be used shall be to the same mix, material

Property	BS EN 1436 Reference	Requirement	Value
Colour	Table 6	1. White 2. Yellow Class Y1, Y2	x, y co-ordinates given x, y co-ordinates given
Luminance Factor	Table 5	1. Class B2 2. Class B1	0.3 0.2
Skid Resistance	Table 7	1. Class S1 2. Class S1	45 45
Retroreflect-ivity	Table 2 Class of RL for dry markings	1. Class R2 2. Class R1	100 80

* Note: 1 = White, 2 = Yellow

4 (11/07) The width tolerances and thickness for screed, spray, preformed and extruded white or yellow lines shall be in accordance with The Traffic Signs Regulations and General Direction 2002. With the exception of the road markings listed in Regulation 32 (2) of The Traffic Signs Regulations and General Directions, in no case shall any materials be laid more than 6 mm thick. Unless specified, all white markings shall be reflectorised with glass beads in accordance with BS EN 1423 and BS EN 1424 by incorporation (apart from preformed markings) into the road marking mixture and to the wet surface of the marking. The glass beads shall not have more than 1,000 ppm of Arsenic Trioxide, 200 ppm of Lead and 1,000 ppm of Antimony. The Contractor shall supply test certificates showing compliance with these requirements.

5 Where there is requirement for improved visibility in wet conditions at night, products showing the following performance in addition to that stated in sub-Clause 3 shall be used.

Property	BS EN 1436 Reference	Requirement	Value
Retroreflect-ivity	Table 3	Class RW3	50

6 Where there is a requirement for improved skid resistance as referred to in Appendix 12/3 products showing the following performance in addition to that stated in sub-Clause 3 shall be used.

Property	BS EN 1436 Reference	Requirement	Value
Skid	Table 7	Class S3	55

7 The pavement shall be prepared in accordance with the following:

(i) Where the marking is to be applied on concrete carriageways, the transverse texturing shall be freed from all traces of curing compound by wire brushing or other approved means. Prior to the application of the thermoplastic material a tack coat compatible with the road surface and the marking material shall be applied in accordance with the manufacturer's instructions.

(ii) On surface dressed carriageways, all loose chippings where the marking is to be applied shall be removed prior to application.

8 The application of permanent road markings shall be in accordance with the Sector Scheme described in Appendix A. Road marking materials shall only be applied to surfaces which are clean and dry. Markings shall be free from raggedness at their edges and shall be uniform and free from streaks. Longitudinal road markings shall be laid to a regular alignment.

Raised Rib Road Markings

9 Raised Rib Road Markings shall only be used on motorways with full width hardshoulders or all-purpose roads (both single and dual carriageway) with at least 1 metre wide hardstrips. They shall comply with sub-Clauses 1, 2(i), 3, 5, 6, 7 and 8 of this Clause.

10 Raised Rib Road Markings shall be white lines which are continuous over the sections where they are specified in Appendix 12/3. Where specified in Appendix 12/3 gaps shall be provided for drainage purposes.

11 (08/03) Raised Rib Road Markings shall be in accordance with The Traffic Signs Regulations and General Directions 2002 (Statutory Instrument 2002 No. 3113), Diagrams 1012.2 and 1012.3, as appropriate. Spacing of the transverse raised ribs shall be 500 mm or 250 mm as specified in Appendix 12/3.

12 Raised Rib Road Markings shall not be used adjacent to hatched areas or central reserve crossings except as prescribed for use with diagrams 1040.3, 1040.5 and 1042.

Temporary Road Markings

13 Temporary road markings shall only be adopted with the prior approval of the Overseeing Organisation. They shall comply with sub-Clauses 1 to 8 of this Clause or if required to be removable, be constructed

TS / WG

1212NI (05/01) **Road Markings**

General

1 Road markings shall be white or yellow (Classes Y1 and Y2) complying with BS EN 1436 Table 6, as appropriate except where an alternative shade has been specified in Appendix 12/3. The markings shall consist of continuous or intermittent lines, letters, figures, arrows or symbols and comply with sub-Clauses 2 to 12 of this Clause.

Statutory requirements controlling road markings are contained in The Traffic Signs Regulations (Northern Ireland) 1997 and subsequent amending Regulations.

Permanent Road Markings

2 (11/07) Permanent road markings shall be one of the following materials and comply with the colour, location and material type requirements described in Appendix 12/3:

(i) thermoplastic road marking material or paint in accordance with BS EN 1871;

(ii) permanent preformed road markings in accordance with BS EN 1790;

(iii) other materials as described in Appendix 12/3.

They shall be also tested in road trials to the Roll-over class of P5 in accordance with procedure stated in BS EN 1824 to demonstrate compliance with the performance requirements as stated in sub-Clauses 3 to 6. The test report shall give particulars of the quality and quantity of the material, including drop on glass beads laid at the test site for future reference and comparison purposes should such a need arise.

3 Road marking shall have the following road performance as defined in BS EN 1436 for the period of the functional life starting from the date of application or when the road is trafficked, whichever is later. The materials to be used shall be to the same mix, material quality, quantity and rate of application as used on the test site.

Property	BS EN 1436 Reference	Requirement*	Value
Colour	Table 6	1. White 2. Yellow Class Y1, Y2	x, y co-ordinates given x, y co-ordinates given
Luminance Factor	Table 5	1. Class B2 2. Class B1	0.3 0.2
Skid Resistance	Table 7	1. Class S1 2. Class S1	45 45
Retroreflect-ivity	Table 2 Class of R_L for dry markings	1. Class R2 2. Class R1	100 80

* Note: 1 = White, 2 = Yellow

4 (11/07) The width tolerances and thickness for screed, spray, preformed and extrusion white or yellow lines shall be in accordance with the Traffic Signs Regulations (Northern Ireland) 1997. With the exception of the road markings listed in Regulation 29 (2) of The Traffic Signs Regulations (Northern Ireland), in no case shall any materials be laid more than 5 mm thick. Unless otherwise specified, all white markings shall be reflectorised with glass beads in accordance with BS EN 1423 and BS EN 1424 by incorporation (apart from preformed markings) into the road marking mixture and to the wet surface of the marking. The glass beads shall not have more than 1,000 ppm of Arsenic Trioxide, 200 ppm of Lead and 1,000 ppm of Antimony. The Contractor shall supply test certificates showing compliance with these requirements.

5 Where there is requirement for improved visibility in wet conditions at night, products showing the following performance in addition to that stated in sub-Clause 3 shall be used.

Property	BS EN 1436 Reference	Requirement	Value
Retroreflect-ivity	Table 3	Class RW3	50

6 Where there is a requirement for improved skid resistance as referred to in Appendix 12/3, products showing the following performance in addition to that stated in sub clause 3 shall be used.

Property	BS EN 1436 Reference	Requirement	Value
Skid Resistance	Table 7	Class S3	55

7 The pavement shall be prepared in accordance with the following:

(i) where the marking is to be applied on concrete carriageways, the transverse texturing shall be freed from all traces of curing compound by wire brushing or other approved means. Prior to the application of the thermoplastic material a tack coat compatible with the road surface and the marking material shall be applied in accordance with the manufacturer's instructions;

(ii) on surface dressed carriageways, all loose chippings where the marking is to be applied shall be removed prior to application.

8 The application of permanent road markings shall be in accordance with the Sector Scheme described in Appendix A. Road marking materials shall only be applied to surfaces which are clean and dry. Markings shall be free from raggedness at their edges and shall be uniform and free from streaks. Longitudinal road markings shall be laid to a regular alignment.

Raised Rib Road Markings

9 Raised Rib Road Markings shall only be used on motorways with full width hardshoulders or all-purpose roads (both single and dual carriageway) with at least 1 metre wide hardstrips. They shall comply with sub-Clauses 1, 2(i), 3, 5, 6, 7 and 8 of this Clause.

10 Raised Rib Road Markings shall be white lines which are continuous over the sections where they are specified in Appendix 12/3. Where specified in Appendix 12/3 gaps shall be provided for drainage purposes.

11 Raised Rib Road Markings shall be in accordance with The Traffic Signs Regulations (Northern Ireland) 1997, Diagrams 1012.2 and 1012.3, as appropriate. Spacing of the transverse raised ribs shall be 500 mm or 250 mm as specified in Appendix 12/3.

12 Raised Rib Road Markings shall not be used adjacent to hatched areas or central reserve crossings

Example of national variations

Different regulations

Modification to a requirement contained in the main text

HE (main text)

14 When temporary road markings are used on surfaces that will continue to be used by public traffic after their removal, any shadow trace remaining after their removal shall be permanently obliterated. Preformed materials shall not be used for this obliteration.

15 Temporary road markings constructed from a proprietary preformed road marking material shall only be adopted in locations and on types of road surface as described in Appendix 12/3 and shall comply with any other requirement therein. The marking material shall be new and together with any primer shall be stored and installed in accordance with the manufacturer's instructions and within the recommended shelf life.

16 Temporary preformed road markings shall only be applied to surfaces that are clean and dry. Upon removal they shall be disposed of off Site and if any making good is necessary to the road surface it shall be satisfactorily carried out before the road is opened to traffic.

Road Markings on Porous Asphalt Surfacing

17 Spray paint, thermoplastic applied by machine screed, spray or extrusion or preformed road markings shall be used for carriageway markings on porous asphalt surfacing. Manual screeding shall not be permitted except for directional arrows and similar markings.

Removal of Road Markings

18 (05/08) The removal of road markings on surfaces that will continue to be used by traffic shall be undertaken in a manner that will avoid damage to the surface.

The removal of temporary road markings shall comply with sub-Clauses 14 and 15 of this Clause.

For bituminous running surfaces, the removal of permanent road markings shall be by mechanical means or forced air abrasive (shot blasting) only. Hot Compressed Air (HCA) lance shall be permitted on other types of running surfaces. In all cases the Contractor shall submit details of the proposed method for the Overseeing Organisation's consent.

Masking of Road Markings

19 (11/07) When black masking materials are required to cover existing permanent road markings, they shall comply with BS 7962. The total thickness of original and masking materials shall not exceed 6 mm.

(05/04) **Longitudinal Road Markings Lateral Tolerances**

20 (05/04) For longitudinal road markings, the lateral tolerance shall be within ± 25mm from the designed position. Any discontinuities between road markings shall be replaced with a smooth taper from one road marking to the other. The length of the transition shall be derived from table below. All road markings shall comply with the dimensions, angles and proportions stated in the Traffic Signs Regulations and General Directions 2002 (Statutory Instrument 2002 No.3113 and any subsequent amending Regulations.

Speed Limit (mph)	Taper
30	1 in 40
40	1 in 40
50	1 in 45
60	1 in 50
70	1 in 55

TS / WG

14 When temporary road markings are used on surfaces that will continue to be used by public traffic after their removal, any shadow trace remaining after their removal shall be permanently obliterated. Preformed materials shall not be used for this obliteration.

15 Temporary road markings constructed from a proprietary preformed road marking material shall only be adopted in locations and on types of road surface as described in Appendix 12/3 and shall comply with any other requirement therein. The marking material shall be new and together with any primer shall be stored and installed in accordance with the manufacturer's instructions and within the recommended shelf life.

16 Temporary preformed road markings shall only be applied to surfaces that are clean and dry. Upon removal they shall be disposed of off Site and if any making good is necessary to the road surface it shall be satisfactorily carried out before the road is opened to traffic.

Road Markings on Porous Asphalt Surfacing

17 Spray paint, thermoplastic applied by machine screed, spray or extrusion. or preformed road markings shall be used for carriageway markings on porous asphalt surfacing. Manual screeding shall not be permitted except for directional arrows and similar markings.

Removal of Road Markings

18 The removal of road markings on surfaces that will continue to be used by traffic shall be undertaken in a manner that will avoid damage to the surface.

The removal of temporary road markings shall comply with sub-Clauses 14 and 15 of this Clause.

The removal of permanent road markings shall be by mechanical means only. The Contractor shall submit details of the system he proposes to use to the Overseeing Organisation for approval.

Masking of Road Markings

19 (11/07) When black masking materials are required to cover existing permanent road markings, they shall comply with BS 7962. The total thickness of original and masking materials shall not exceed 6 mm.

(05/04) **Longitudinal Road Markings Lateral Tolerances**

20 (05/04) For longitudinal road markings, the lateral tolerance shall be within ± 25 mm from the designed position. Any discontinuities between road markings shall be replaced with a smooth taper from one road

be derived from table below. All road markings shall comply with the dimensions, angles and proportions stated in the Traffic Signs Regulations (Northern Ireland) 1997 and any subsequent amending Regulations.

Speed Limit (mph)	Taper
30	1 in 40
40	1 in 40
50	1 in 45
60	1 in 50
70	1 in 55

Approach to review current national variations

- **Technical Authors in National Highways** are identifying current national variations and checking those that are needed (e.g. for different legislative rules) and those that could be removed.
- They will engage their counterparts in the Devolved Administrations to agree whether national variations can be removed or should be retained.

Nationally Determined Requirements and Sections

- In the future MCHW, national variations will be called “Nationally Determined Requirements” (NDR) or “Nationally Determined Sections” (NDS).

- **Technical Authors in each Overseeing Organisations** shall be responsible for developing their own NDRs and NDSs following the same rules as for general constructor requirements and specifier instructions.

Nationally Determined Requirements (NDR)

- Where needed, NDRs shall be created for each Overseeing Organisation, authored ‘in-line’ and kept together with core requirements in CARS.

- If an Overseeing Organisation does not have country-specific content, the NDR shall be as follows:

  ‘*No nationally determined requirements are provided*’

5.12	REQUIREMENT
#5.13	Nationally Determined Requirement
E/5.13	This requirement shall be followed.
NI/5.13	No nationally determined requirement is provided.
S/5.13	This requirement shall be followed.
W/5.13	No nationally determined requirement is provided.

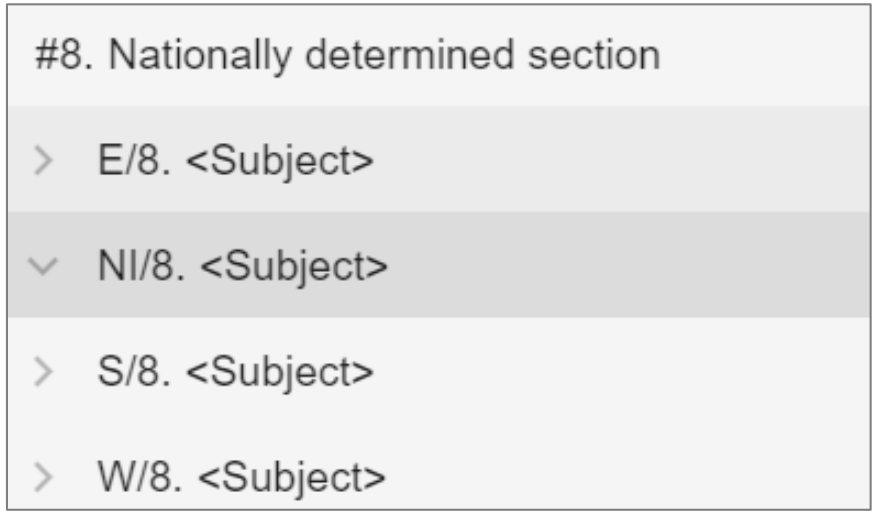
Use CARS to draft NDRs – attend training

Nationally Determined Sections (NDS)

- Where needed, NDSs shall be created for each Overseeing Organisation.

- If an Overseeing Organisation does not have content for the NDS, the NDR shall only contain the following sentence:

  '*No nationally determined requirements are provided*'



Use CARS to draft NDSs - attend training

Standard Format Requirements in NDRs soon…

- We are working to support Standard Format Requirements in NDRs
- Plan to finalise the work by early June

Presentation of NDR and NDS in the published documents

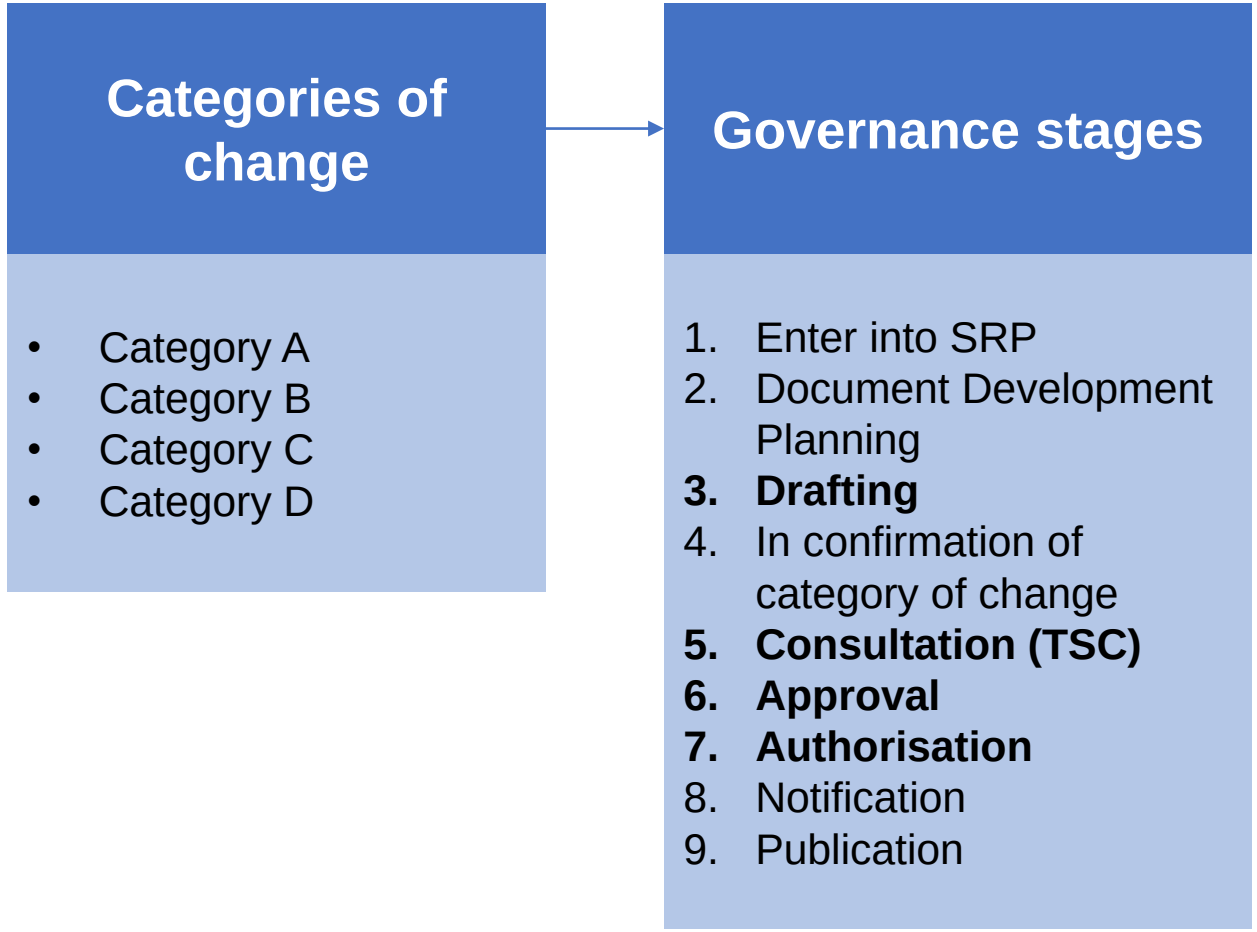
- The style of published MCHW documents is under discussion and will be shared in due course.
  - No impact on drafting rules.
  - Metadata are associated with NDRs.
  - This gives the options to publish NDRs either in NAAs or within the main text thus publishing country-specific documents.

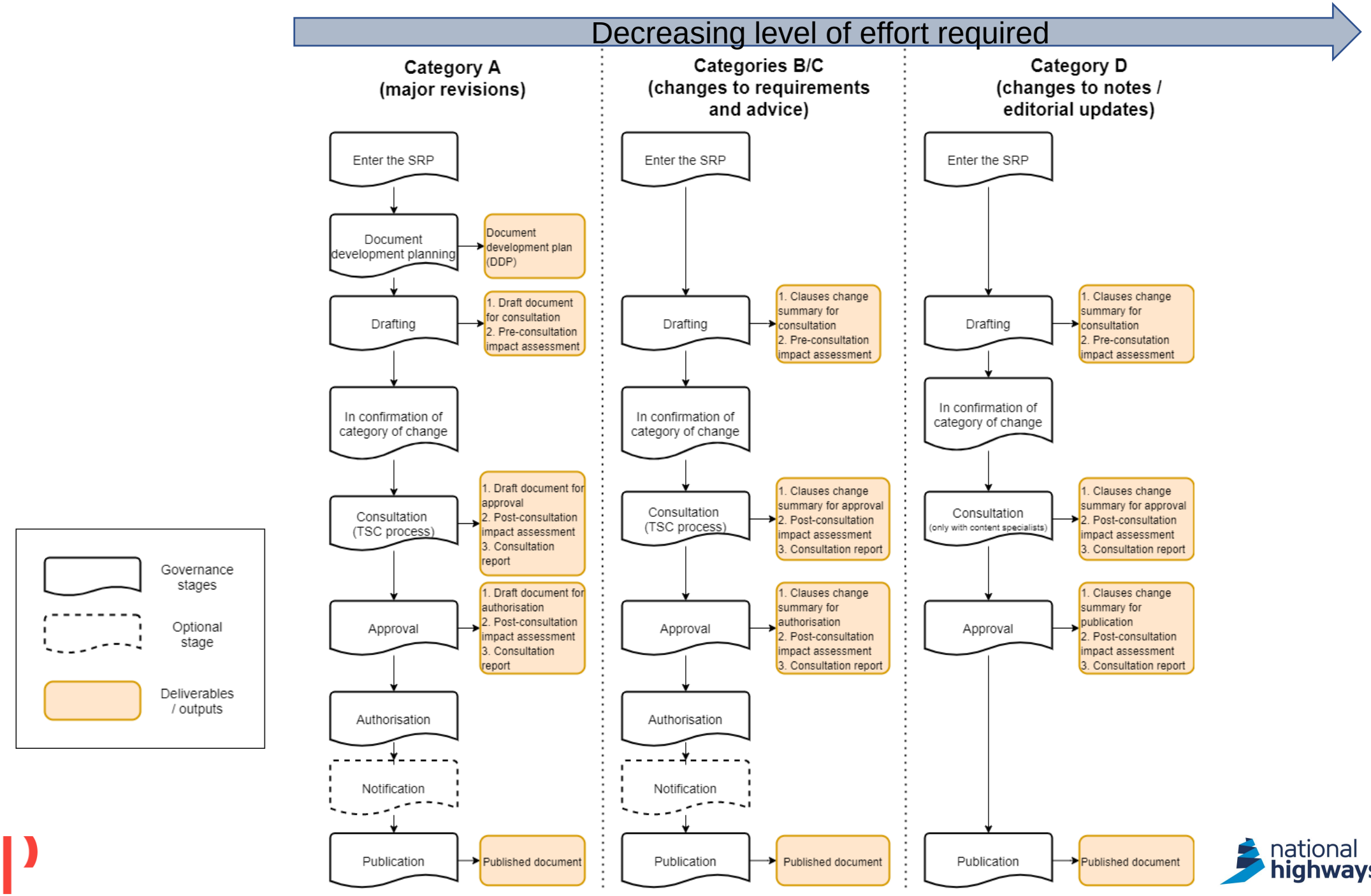
- In the interim, for any queries please contact TAGG.

5. Standards Governance

- Stage
- Key roles and responsibilities

Overview of key changes




Decreasing level of effort required
Category A
(major revisions)
Categories B/C
(changes to requirements and advice)
Category D
(changes to notes / editorial updates)
Enter the SRP
Document development planning
Document development plan (DDP)
Drafting
1. Draft document for consultation
2. Pre-consultation impact assessment
In confirmation of category of change
Consultation (TSC process)
1. Draft document for approval
2. Post-consultation impact assessment
3. Consultation report
Approval
1. Draft document for authorisation
2. Post-consultation impact assessment
3. Consultation report
Authorisation
Notification
Publication
Published document
1. Clauses change summary for consultation
2. Pre-consultation impact assessment
1. Clauses change summary for approval
2. Post-consultation impact assessment
3. Consultation report
1. Clauses change summary for authorisation
2. Post-consultation impact assessment
3. Consultation report
In confirmation of category of change
Consultation (only with content specialists)
1. Clauses change summary for publication
2. Post-consultation impact assessment
3. Consultation report
Governance stages
Optional stage
Deliverables / outputs

D. Changes to notes and spelling mistakes

Responsibilities of Technical authors in the Devolved Administrations

- Manage and maintain your technical content.
- Ensure technical content is MDD compliant.
- Liaise with the National Highways' Technical author for the relevant document.
- Liaise with the TSC chair for the relevant discipline.
- Liaise with the National Highways' content specialists.
- Follow the agreed timescale for authoring.
- Answer any queries from TAGG publication team during the publication process.

D. Changes to notes and spelling mistakes

Responsibilities of Technical consultees

- Participate fully and in a timely manner in the consultation process, communicating leave / absences / other commitments to the TSC chair and secretary so that the consultation runs smoothly and effectively.
- Review the document development plan (for category of change A only) and provide any feedback to the technical author as relevant.
- Review the governance documents provided at TSC level, make comments and suggest improvements.

Stakeholder	Who	A. Policy Change / Rewrite / New document development	B. Change to requirement	C. Change to advice	D. Changes to notes and editorial updates
Technical Author	Technical specialist within an Overseeing Organisation	Responsible	Responsible	Responsible	Responsible
TSC chair	Leads the TSC	Accountable	Accountable	Accountable	Accountable
Editorial consultees	TAGG Content Specialist	Consulted	Consulted	Consulted	Consulted
Technical consultees	Technical specialists within SES and wider stakeholders for the subject area and interfacing aspects, including Devolved administrations' technical leads	Consulted	Consulted	Consulted	Informed
Concurrence consultees (essential)	• TAGG • Major Projects • Operations • Commercial and Procurement • Health and safety • Equality, diversity and inclusion • Sustainable development and good design • Customer experience	Consulted	Consulted	Consulted	Informed
Concurrence consultees (additional)	• Members from other SES Directorate. • Highways England Legal • Highways England IT • Highways England Asset management • Other Specialists (e.g. risk, BEIS, Financial Services, Asset Advisors Group)	Consulted	Consulted	Consulted	Informed
Additional informed parties	• DfT, DfT Legal, H&S Executive and other governmental and quasi-governmental bodies • National Police Chiefs Council (NPCC) • Local government associations • Outside bodies (trade bodies, industry associations, professional institutions, etc.) • Expert (individual) independent advisors	Informed	Informed	Informed	Informed

Approvers and authorisers

- Approval by TSC chair, Heads of Standards and Divisional Directors (cat. A only)

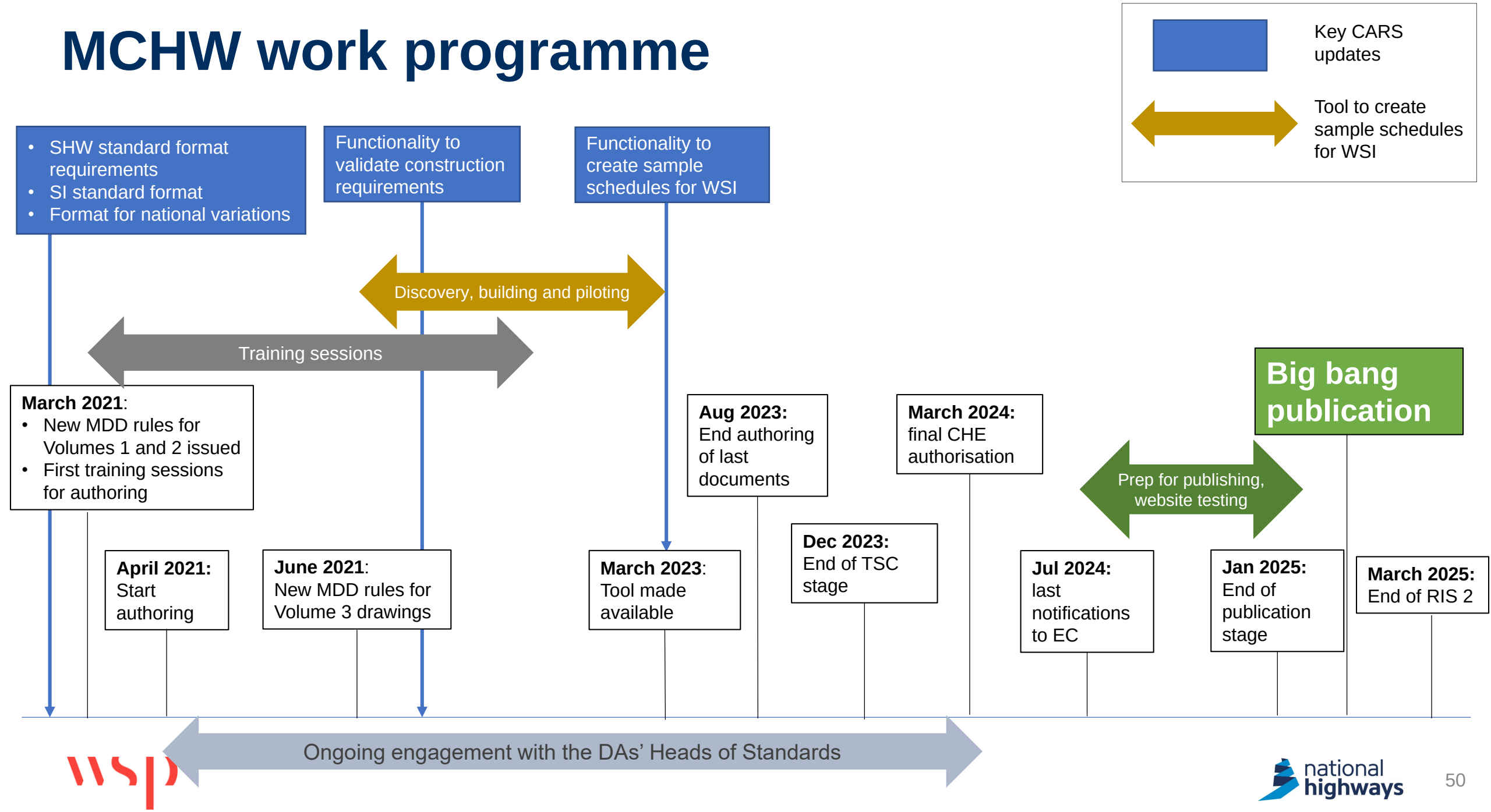
- Authorisation by Chief Highways / Roads Engineers (or delegated staff)

Stakeholder	Who	Major revision	Incremental change		
		A. Policy Change / Rewrite / New document development	B. Change to requirement	C. Change to advice	D. Changes to notes and spelling mistakes
Approvers	TSC chair	Approve	Approve	Approve	Approve
	Devolved administrations' representatives (Heads of Standards)	Approve	Approve	Approve	Approve
	TAGG Group Manager	Approve	Approve	Approve	Approve
	Divisional Directors	Approve	-	-	-
Authorisers	Chief Highways / Roads Engineers (option to delegate to internal staff)	Authorise	Authorise	Authorise	-

6. Programme overview

- Key dates
- Approved programme

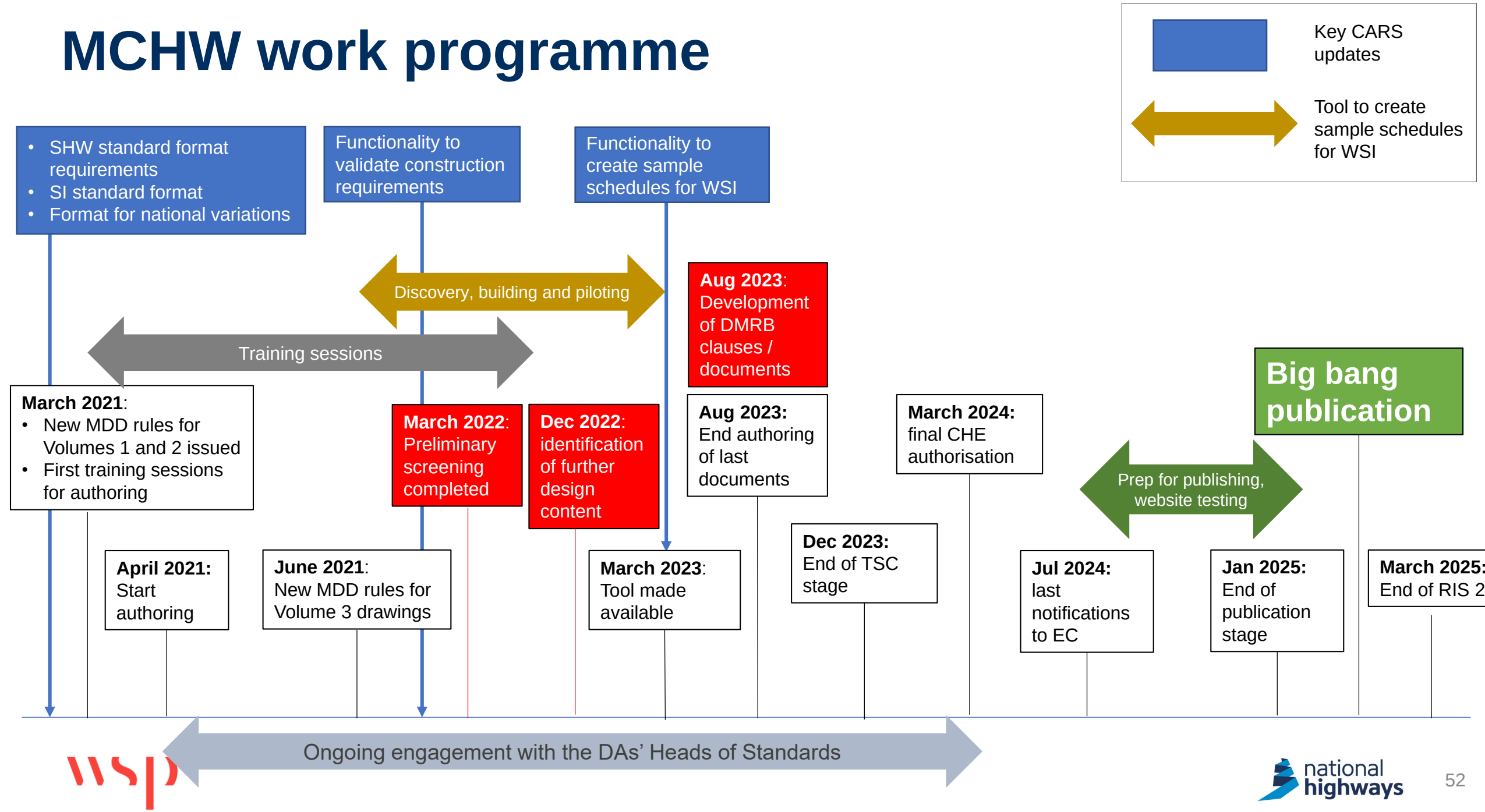
MCHW work programme



Impact on the DMRB work programme

- When updating Volumes 1 and 2, the impact on the DMRB needs to be assessed.
- The following activities will be undertaken by technical authors:
    1. Preliminary screening / filtering exercise to categorise the content and identify content that needs to migrate to the DMRB **(by March 2022)**
    2. Updating of (about 85%) SHW and NfG and identification of further design content to be migrated to the DMRB **(by December 2022)**
    3. Development of clauses for existing DMRB documents / creation of new DMRB documents **(by August 2023)**

MCHW work programme



Key forecast dates

Status	Technical Standards Committee (TSC)	Document reference	Forecast DDP submission	Drafting forecast start	Forecast TSC consultation start	Forecast TSC consultation	Forecast submission for TSC Chair	Comments
In approval by DD	Governance	Series 000	01/09/2021	01/10/2021	15/11/2021	10/01/2022	24/03/2022	Already had TSC
In TSC Review	Geotechnics	Series 2500	12/07/2021	26/07/2021	10/12/2021	29/04/2022	29/05/2022	Already had TSC
In TSC Review	Governance	Series 0100 (104-106)	27/09/2021	01/11/2021	24/01/2022	21/02/2022	11/05/2022	Already had TSC
In TSC Review	Geotechnics	Series 1600	31/05/2021	01/08/2021	04/04/2022	30/06/2022	31/07/2022	Already had TSC
In Drafting	Geotechnics	Volume 5 section 3	31/05/2021	26/07/2021	01/05/2022	31/07/2022	31/08/2022	Due in next 3 months
In SRP Backlog	Operations and Road Wor	Series 1200	31/08/2021	01/11/2021	01/05/2022	30/11/2022	31/12/2022	Due in next 3 months
Category of change confir	Environmental Assessme	Series 0300	31/03/2021	01/05/2021	30/05/2022	31/07/2022	31/08/2022	Due in next 3 months
In Drafting	Road Layout	Series 1200	29/10/2021	01/11/2021	01/06/2022	30/11/2022	31/12/2022	Due in next 3 months
In Drafting	Environmental Assessme	Series 3000	30/11/2021	01/07/2021	30/06/2022	31/08/2022	31/10/2022	Due in next 3 months
In SRP Backlog	Operations and Road Wor	SA 10/05	01/03/2022	31/05/2022	30/06/2022	30/09/2022	17/10/2022	Due in next 3 months
In Drafting	Geotechnics	Series 8000	16/07/2021	01/08/2021	01/07/2022	30/08/2022	30/09/2022	Due in next 3 months
In Drafting	Structures	Series 0400	31/03/2021	25/10/2021	08/08/2022	28/11/2022	31/12/2022	
In SRP Backlog	Governance	Series 0200	31/05/2022	01/07/2022	01/09/2022	30/11/2022	31/12/2022	
Draft submitted to TSC ch	Governance	Series 0100	16/05/2022	30/05/2022	05/09/2022	04/11/2022	09/12/2022	
In Drafting	Drainage	Series 0500	31/08/2021	01/11/2021	10/10/2022	31/01/2023	28/02/2023	
New	Structures	Series 1800	14/02/2022	14/02/2022	24/10/2022	13/02/2023	31/03/2023	
In Drafting	Structures	Series 2000	17/01/2022	17/01/2022	31/10/2022	20/02/2023	31/03/2023	
In Drafting	Structures	Series 2100	17/01/2022	17/01/2022	31/10/2022	20/02/2023	31/03/2023	
In Drafting	Structures	Series 2300	17/01/2022	17/01/2022	31/10/2022	20/02/2023	31/03/2023	
In Drafting	Structures	Series 2400	17/01/2022	17/01/2022	31/10/2022	20/02/2023	31/03/2023	
Ready For Drafting	Structures	Series 2600	28/01/2022	28/01/2022	31/10/2022	20/02/2023	31/03/2023	
In Drafting	Structures	Cathodic protection - r	17/01/2022	17/01/2022	12/12/2022	03/04/2023	31/05/2023	
In Drafting	Structures	Series 5000	25/10/2021	25/10/2021	02/01/2023	24/04/2023	31/05/2023	
In Drafting	Structures	Series 1900	17/01/2022	17/01/2022	02/01/2023	22/05/2023	30/06/2023	
In Drafting	Structures	Series 1300	17/01/2022	17/01/2022	02/01/2023	24/04/2023	31/05/2023	
In Drafting	Control and Communicati	Series 1200	23/08/2021	01/04/2022	04/01/2023	16/02/2023	02/03/2023	
In Drafting	Road Lighting	Series 1400	01/09/2021	17/01/2022	06/02/2023	29/05/2023	30/06/2023	
Returned to tech author wi	Control and Communicati	Series 1500	30/11/2020	01/01/2021	07/02/2023	05/05/2023	30/06/2023	
In Drafting	Structures	Series 1700	17/01/2022	17/01/2022	20/03/2023	10/07/2023	01/11/2023	
In Drafting	Geotechnics	Series 0600	31/05/2021	01/08/2021	01/04/2023	31/07/2023	31/08/2023	
In Drafting	Pavements	Series 0700	30/09/2021	01/12/2021	01/04/2023	30/09/2023	31/10/2023	
In Drafting	Pavements	Series 0800	30/09/2021	01/12/2021	01/04/2023	30/09/2023	31/10/2023	
In Drafting	Pavements	Series 0900	30/09/2021	01/12/2021	01/04/2023	30/09/2023	31/10/2023	
In Drafting	Pavements	Series 1000	30/09/2021	01/12/2021	01/04/2023	30/09/2023	31/10/2023	
In Drafting	Pavements	Series 1100	30/09/2021	01/12/2021	01/04/2023	30/09/2023	31/10/2023	
In SRP Backlog	Structures	Series 7000	17/01/2022	17/01/2022	03/07/2023	27/11/2023	31/12/2023	
In SRP Backlog	Structures	Series 7100	17/01/2022	17/01/2022	03/07/2023	27/11/2023	31/12/2023	
In SRP Backlog	Structures	Series 7200	17/01/2022	17/01/2022	03/07/2023	27/11/2023	31/12/2023	
In SRP Backlog	Structures	Series 7300	17/01/2022	17/01/2022	03/07/2023	27/11/2023	31/12/2023	
In Drafting	Structures	Series 5700	18/02/2022	20/02/2022	03/07/2023	23/10/2023	30/11/2023	
New	Structures	FRP strengthening - n	30/05/2022	30/05/2022	03/07/2023	23/10/2023	30/11/2023	
New	Governance	SD 0/14			01/10/2023			
New	Governance	Volume 0, Section 0, F			01/10/2023			
New	Governance	Volume 0, Section 1, P			01/10/2023			
New	Governance	Volume 0, Section 1, P			01/10/2023			
New	Governance	SD 1/21			01/10/2023			
New	Governance	SA 1/08			01/10/2023			

7. Support and engagement activities

- Support provided
- Engagement

Support provided

- Training slides and recorded video covering drafting rules in detail for Vol 1,2,3
- CARS functionality released, training slides and recorded video available, Help pages refreshed
- MDD rules issued
- Content specialists available (with supporting content reviewers):
  - Kate Albon Kathleen.Albon@nationalhighways.co.uk
  - Simon Hartshorne Simon.Hartshorne2@nationalhighways.co.uk
  - Maurice Jones Maurice.Jones@nationalhighways.co.uk (for DMRB)
- For any queries, please contact PM Gareth Smith Gareth.Smith@nationalhighways.co.uk
  - Weekly drop-in sessions are available to ask queries and have in-depth discussions

Ongoing engagement between National Highways and Devolved Administrations (1/2)

- Becky Ansell shares **weekly/twice monthly emails** (as required) with Heads of Standards outlining documents awaiting approval including:
  - a summary of the change;
  - a link to a folder of PDF documents from CARS to share internally; and
  - details of who attended the Technical Standards Committee consultation.
- **Jira dashboards** are available for all Devolved Administration colleagues with details of documents awaiting Heads of Standards or CHE/CHE approval, plus documents coming up to the approval stages:
  - Department for Infrastructure Northern Ireland dashboard: https://highwaysengland.atlassian.net/jira/dashboards/12774
  - Transport Scotland dashboard: https://highwaysengland.atlassian.net/jira/dashboards/12772
  - Welsh Government dashboard: https://highwaysengland.atlassian.net/jira/dashboards/12773

Ongoing engagement between National Highways and Devolved Administrations (2/2)

- Kirt Surti holds **monthly calls** with each of the Heads of Standards for half an hour to talk about approvals plus any other queries.

- A **UKCEC meeting** is held with the Chief Highways/Road Engineers and Heads of Standards on a twice yearly basis and covers a range of relevant topics mostly around the challenges that each DA is facing and sharing experiences.
  - Recent examples are tackling the challenges of meeting Net Zero Carbon targets, automatic cone laying & road recycling materials in Scotland.

Engagement with NH Technical Authors and Content Specialists

Engagement with the National Highways' Technical Authors

- Please engage with relevant Technical Authors throughout the drafting activities.
- Look at the programme and key dates

Engagement with National Highways' Content Specialists

- It is highly recommended to keep in touch with the content specialists to share NDRs and NDSs.
- Do not wait to complete the drafting, please share intermediate drafts for progressive assurance.

Closing remarks

Objectives for today

- Provide on overview of the Future MCHW, including vision, programme, key drafting rules for Volumes 1,2,3, and for national variations.
- Refresh basic information on standards governance, your roles and responsibilities
- Explain support that will be provided throughout the drafting process.
- Collect questions from the audience.

Outcomes from today

- Understand the necessity for compliance with the new structure and style of Volumes 1,2,3, including national variations.
- Understand the high-level principles behind the update of the MCHW and where to find detailed training material.
- Understand roles and responsibilities related to standards governance
- Be ready to start drafting.

Feedback on this training:

https://survey.alchemer.eu/s3/90453096/MCHW-training-for-DAs-29-04-2022

Thank you