The New Specification for Highways Works

21st January 2026

Joe Poulsom

The New Specification for Highways Works

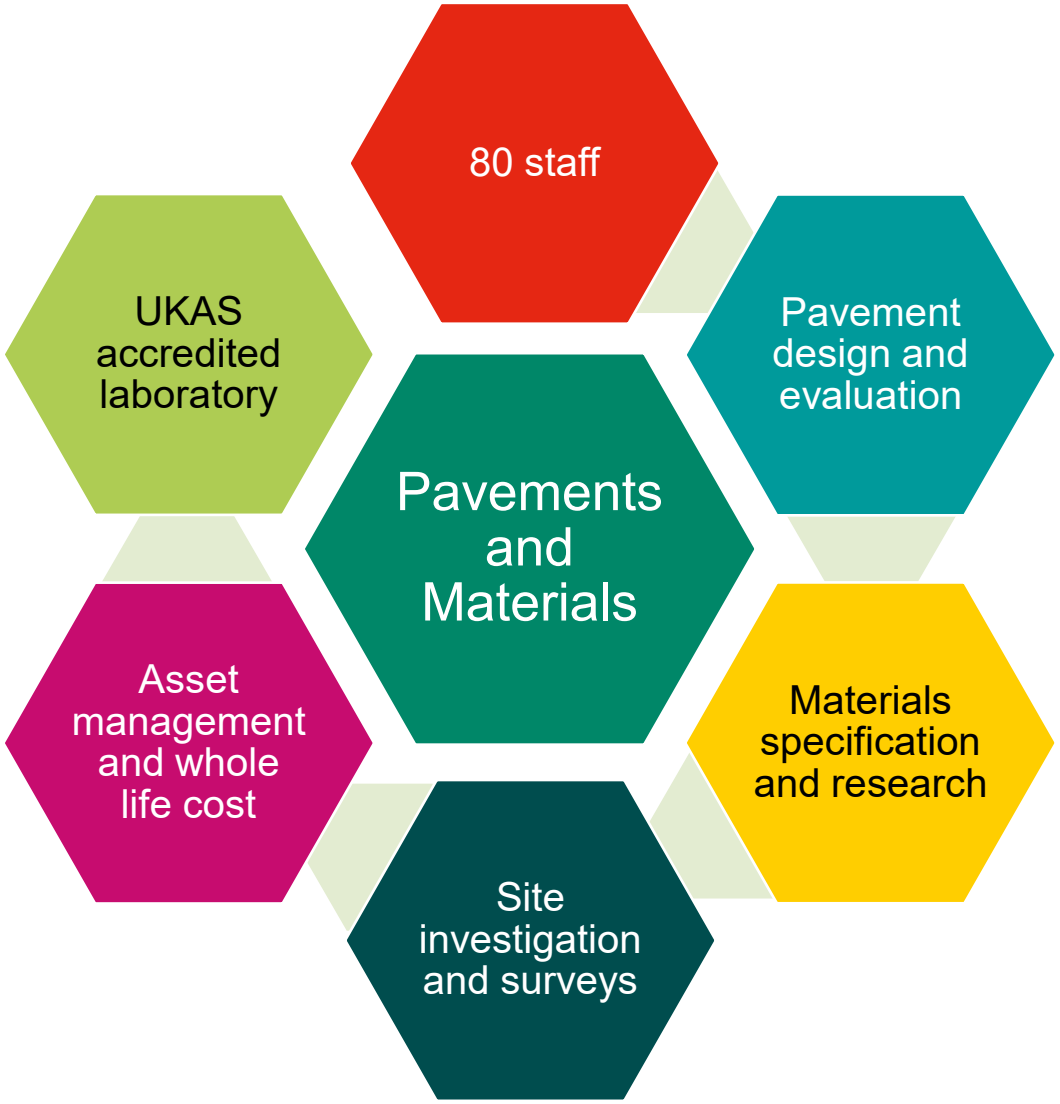
Agenda

- Introduction
- How and why the SHW has changed
  - New structure
  - New documents
  - New document structure
  - New contract specific documents
- What this means to local authorities who use the SHW
- What you might need to do next

Please keep your microphone on mute

I'll answer questions at the end – feel free to put them in the chat as we go, or unmute yourself at the end.

AECOM Pavements, Materials and Operations



We are a one stop shop!

Recent and ongoing projects

- New Specification for Highway Works (SHW)
- Design Manual for Roads and Bridges (DMRB)
- Concrete pavement maintenance manual (CPMM)
- Long term monitoring of innovations on the strategic road network:
  - Cold recycled bound material
  - Warm mix asphalt
  - Geosynthetics
- Research on reflective cracking of asphalt over concrete

Introduction

National Highways sets of documents: MCHW rewrite

The Manual of Contract Documents for Highway Works (MCHW) is a National Highways' standard suite of specification documents which are included within a construction contract and the Contractor is required to comply with its contents.

The MCHW has had the same format for over 30 years.

Following an industry consultation, National Highways committed in RIS2 (2020 – 2025), to updating the MCHW to create a suite of clear, unambiguous and user-oriented digitally-enabled documents that met the needs of modern contacts and projects.

The new specification and updated DMRB was launched in October 2025.

What changes have been made to the MCHW?

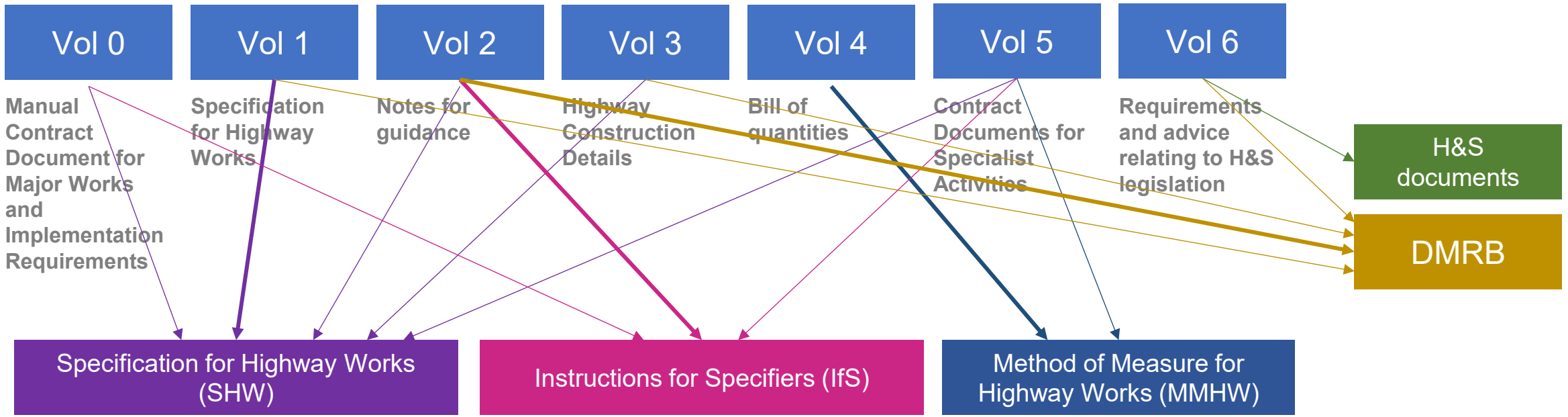
Overview of changes

- The MCHW has a **new structure & references**
- The MCHW has a consistent clause style with clauses digitalised
- Digitalised content supports quicker specification preparation
- The changes support MCHW & DMRB compatibility
- The new MCHW **does not inhibit innovation**
- Works Specific Requirement (WSR) templates **replace contract specific appendices** contained in the Notes for Guidance.

Benefits of rewriting the MCHW

- ✓Up-to-date requirements
- ✓More efficient contract preparation
- ✓Fewer tender & construction queries and CEs
- ✓Reduced disputes during construction
- ✓Lower carbon construction

New ‘MCHW’ structure



Clear and unambiguous requirements:
<u>No more guidance</u>

‘Contract specific appendices’ replaced by ‘work specific requirements’

Other information has been archived

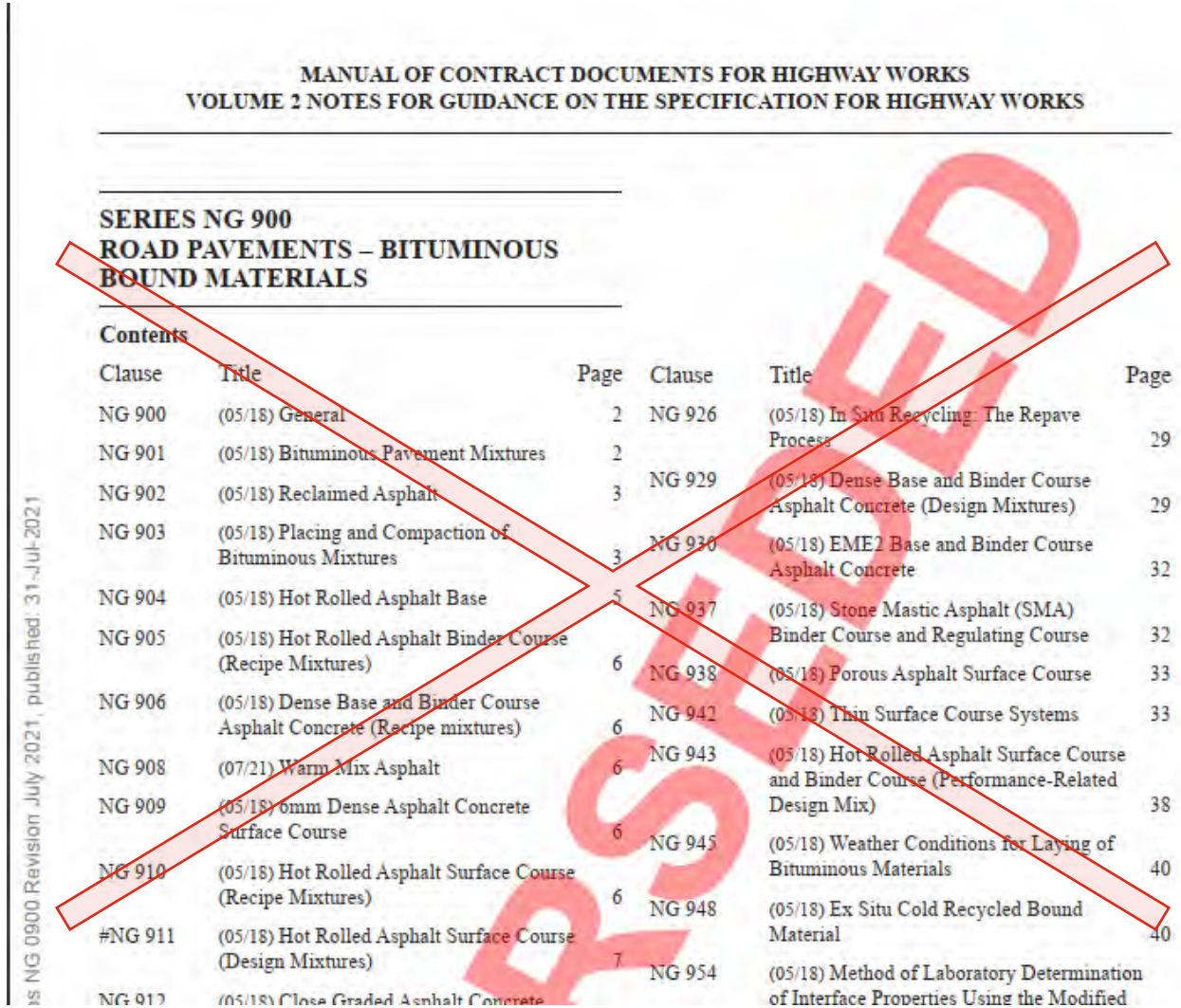
Volume 1 and 2

Specification for Highway Works (SHW)

Instructions for Specifiers (IfS)

DMRB

Other information: **archived**



MANUAL OF CONTRACT DOCUMENTS FOR HIGHWAY WORKS
VOLUME 2 NOTES FOR GUIDANCE ON THE SPECIFICATION FOR HIGHWAY WORKS

SERIES NG 900
ROAD PAVEMENTS – BITUMINOUS BOUND MATERIALS

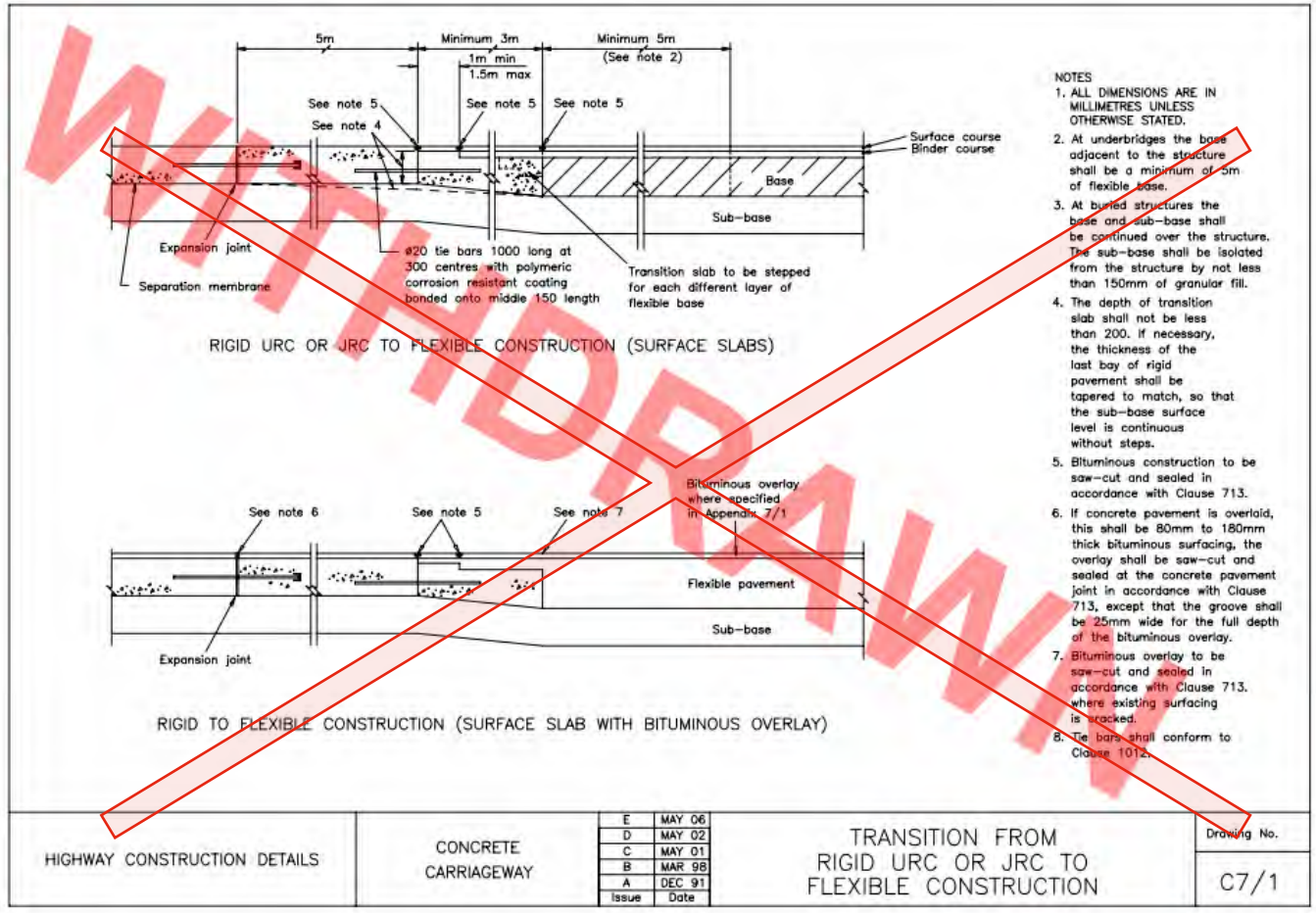
Contents

Volume 3 Highway Construction Details

Specification for Highway Works (SHW)

DMRB

Other information: **archived**



National Highways document structure

No more S0100, S0600, S0900, S1500 etc.

AECOM involved with:
- Pavements
- Structures
- Geotechnics

		Part (discipline)								
		G	L	C (Civil Engineering)					T (Technology)	
		General Principles and Scheme Governance	Sustainability and Environment	Road Layout	Pavements	Highway Structures and Bridges	Drainage	Geotechnics	Control and Communications Technology	Road Lighting
Volume (life-cycle stage)		100-199	100-199	100-199	200-299	300-499	500-599	600-699	100-499	500-999
General information	G									
Appraisal	A									
Design	D									
Contract preparation	P									
Construction	C									
Maintenance and Operation	M									
Inspection and Assessment	S									
Disposal	Z									

GC 101

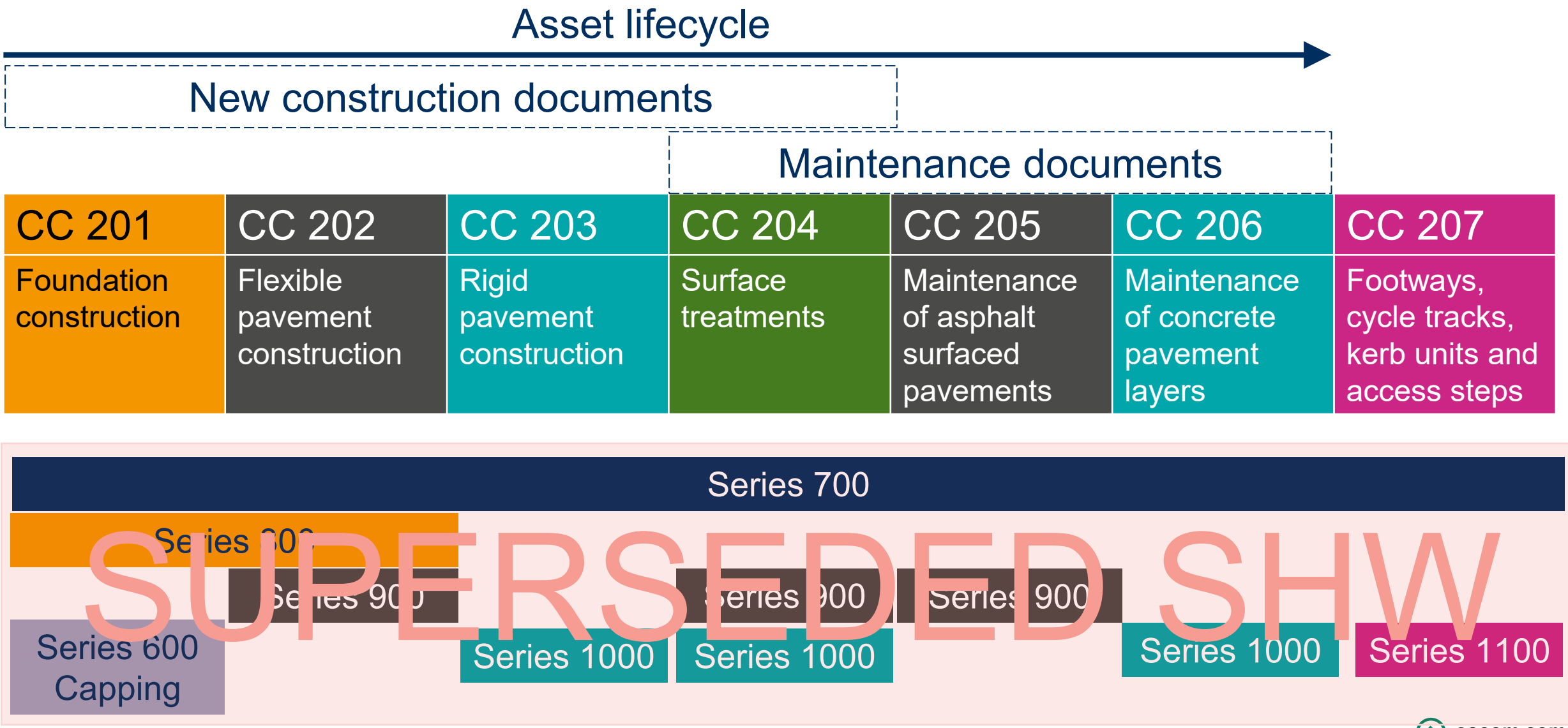
CC 202

CC 501

CC 601

TC 501

Documents are generally split by construction activity or asset class



MCHW structure and content

The MCHW is concerned with all '***elements***' (i.e. products, materials, systems, and activities) needed to build and maintain a Trunk Road.

Specification for Highway Works (SHW)

- What the ***element*** is
- Testing to show the ***element*** is correct
- How the ***element*** needs to be installed
- Testing to show installation is correct
- Tolerances for the finished work
- Evidence and records to be provided to the Client

Instructions for Specifiers (IfS)

+ Drawings

- What ***elements*** to use, and where
- Any specific testing
- Any specific instructions

PLUS

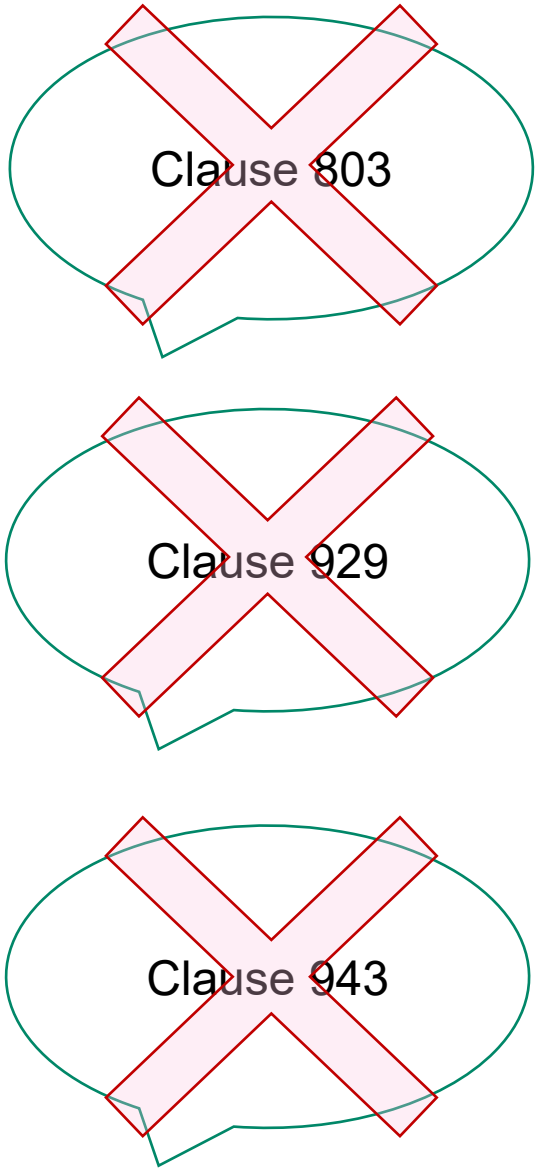
Any additions or deviations from the SHW requirements

Method of Measure for Highway Works (MMHW)

+ Bill of Quantities

- Units for measuring ***elements***
- Rules for how each ***elements*** is measured
- Quantity ranges against which unit rate applies

New clause structure – pavements example



Type 1
unbound
mixture

AC 20 dense
bin 40/60 des W

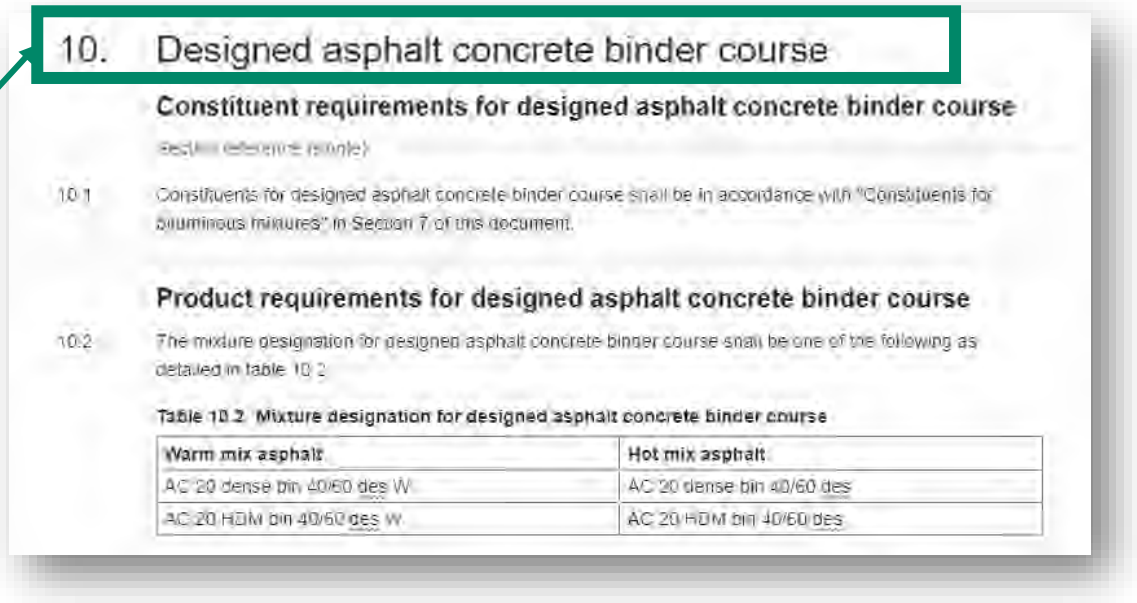
CC 20# Clause #####

SMA 14 bin
PMB W

HRA 35/14 F
bin PMB Perf

New document structure - referencing

- ✓Clause numbers from 1 (no prefix)
- ✓No more Clause 9yy (942, 929…)



10. Designed asphalt concrete binder course

Constituent requirements for designed asphalt concrete binder course

10.1 Constituents for designed asphalt concrete binder course shall be in accordance with "Constituents for bituminous mixtures" in Section 7 of this document.

Product requirements for designed asphalt concrete binder course

10.2 The mixture designation for designed asphalt concrete binder course shall be one of the following as detailed in table 10.2

Table 10.2 Mixture designation for designed asphalt concrete binder course

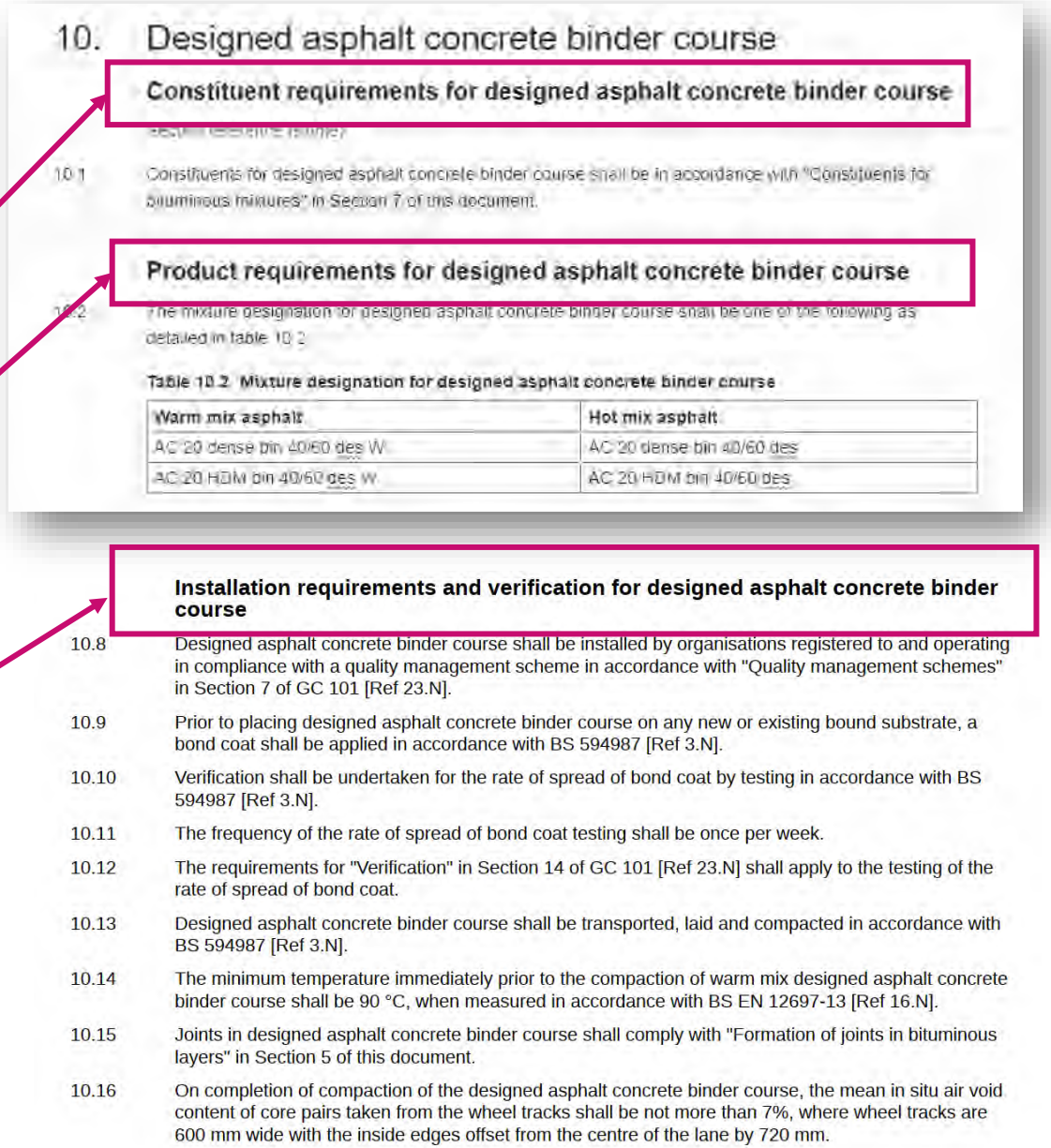
Warm mix asphalt	Hot mix asphalt
AC 20 dense bin 40/60 des W	AC 20 dense bin 40/60 des
AC 20 HDM bin 40/60 des W	AC 20 HDM bin 40/60 des

New document structure - referencing

- ✓Consistency between clauses
  - ✓Constituents
  - ✓Products
  - ✓Installation

All clauses have:

- only one subject
- a standard format
- consistent wording.



10. Designed asphalt concrete binder course

Constituent requirements for designed asphalt concrete binder course

10.1 Constituents for designed asphalt concrete binder course shall be in accordance with "Constituents for bituminous mixtures" in Section 7 of this document.

Product requirements for designed asphalt concrete binder course

10.2 The mixture designation for designed asphalt concrete binder course shall be one of the following as detailed in table 10.2

Table 10.2 Mixture designation for designed asphalt concrete binder course

Warm mix asphalt	Hot mix asphalt
AC 20 dense bin 40/60 des W	AC 20 dense bin 40/60 des
AC 20 HDM bin 40/60 des W	AC 20 HDM bin 40/60 des

Installation requirements and verification for designed asphalt concrete binder course

10.8 Designed asphalt concrete binder course shall be installed by organisations registered to and operating in compliance with a quality management scheme in accordance with "Quality management schemes" in Section 7 of GC 101 [Ref 23.N].

10.9 Prior to placing designed asphalt concrete binder course on any new or existing bound substrate, a bond coat shall be applied in accordance with BS 594987 [Ref 3.N].

10.10 Verification shall be undertaken for the rate of spread of bond coat by testing in accordance with BS 594987 [Ref 3.N].

10.11 The frequency of the rate of spread of bond coat testing shall be once per week.

10.12 The requirements for "Verification" in Section 14 of GC 101 [Ref 23.N] shall apply to the testing of the rate of spread of bond coat.

10.13 Designed asphalt concrete binder course shall be transported, laid and compacted in accordance with BS 594987 [Ref 3.N].

10.14 The minimum temperature immediately prior to the compaction of warm mix designed asphalt concrete binder course shall be 90 °C, when measured in accordance with BS EN 12697-13 [Ref 16.N].

10.15 Joints in designed asphalt concrete binder course shall comply with "Formation of joints in bituminous layers" in Section 5 of this document.

10.16 On completion of compaction of the designed asphalt concrete binder course, the mean in situ air void content of core pairs taken from the wheel tracks shall be not more than 7%, where wheel tracks are 600 mm wide with the inside edges offset from the centre of the lane by 720 mm.

Work specific requirements – previous format

Clause Number	Work, Goods or Materials	Test	Frequency of testing	Test Certificate	Comments
		SMC (N)	Weekly		
		Omc/mc, mc or MCV (N)	1 per 400 tonnes		
		Organic matter/WSS (N)	Weekly		
		Oxidisable sulfides (OS) and total potential sulfate (TPS) content (N)	Weekly		
		pH/Chloride ion content (N)	Weekly		
		Resistivity (N)	1 per 400 tonnes		
		Undrained and drained shear parameters (N)	1 per 400 tonnes		
	6F4 and F5 - Selected Granular Fill (imported)	Size designation and overall grading category	1 per week		Requirements of Table 6/1 to be met.
		Maximum fines and oversize category	1 per week		
		Resistance to fragmentation (N)	1 per source		
		Volume stability of blast furnace slag	Once every 6 months		
		Volume stability of steel (BOF and EAF) slag	Once every 6 months		
		Laboratory dry density and optimum water	As required		

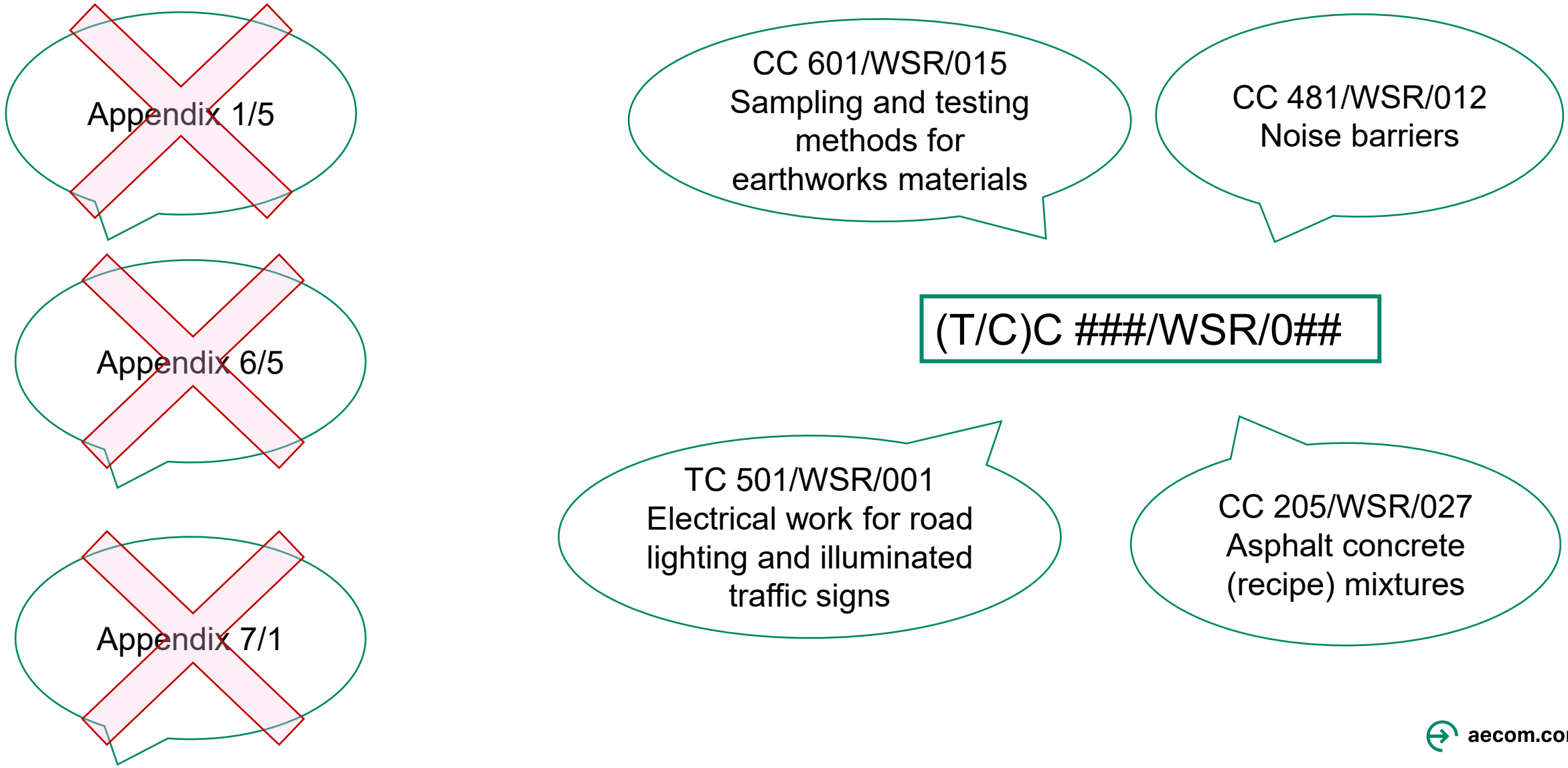
5 (02/16) REQUIREMENTS FOR CONSTRUCTION MATERIALS – SCHEDULE 5

[Note to compiler: Schedule 5 should be completed for every permitted construction material identified in Schedule 3.]

Schedule 5: Requirements for Construction Materials

Material Ref.	Clause	Description	Requirement
	803	Type 1 unbound mixture	Mixtures containing crushed gravel coarse aggregate: – permitted *[803.1]*: – minimum CBR *[803.8]*: – trafficking trial *[803.8]*:
	804	Type 2 unbound mixture	Minimum CBR: – required *[804.6]*: – minimum value *[804.6]*: Mixtures containing more than 50% asphalt arisings: – permitted *[804.1]*: – trafficking trial *[804.11]*
	807	Type 4 (asphalt arisings) unbound mixture	Trafficking trial: – required *[807.9]*
	820	Aggregates for HBM	Rock coarse aggregates *[820.2]*
	821	Cement bound granular mixtures A (CBGM A)	Laboratory mechanical performance category: C 3/4, C 5/6, C 8/10; T1, T2, T3 *[821.5 and Table NG 8/2]*
	822	Cement bound granular mixtures B (CBGM B)	Aggregate requirements: LA_{50} or LA_{60} *[822.2, Table 8/12]* Laboratory mechanical performance category: C 8/10, C 12/15, C 16/20, C 20/25; T3, T4, T5 *[822.5 and Table NG 8/2]*
	823	Cement bound granular mixtures C (CBGM C)	Laboratory mechanical performance category: C 8/10, C12/15, C 16/20, C20/25; T3, T4, T5 *[823.6 and Table NG 8/2]*

Work specific requirements - new structure and format



Work specific requirements – stakeholder drivers and approach

Schedules in tabular format with clear inputs (from DMRB)

Limited or no ‘free text’

Bespoke cloud-based specifier tool*

*Spreadsheet format available

No more appendix 1/5, 7/1 etc.

Work specific requirements – new spreadsheet format

CC 202/WSR/001 General requirements for flexible pavement construction

Version LIVE, 2024-10-03

Instruction for completion: remove rows marked with an asterisk before issuing as part of a tender or contract.

1 [Element 1]

General requirements for flexible pavement construction

Section 1, CC 202 version LIVE, 2024-10-03

1.1 **Work specific requirements**

1.1.1 (CC 202/1.1) Flexible pavement construction shall be:

Drawing/model number (a)	Design level document number (b)	Location (c)	Chainage from m (d)	Chainage to m (e)	Flexible pavement option (f)	Pavement foundation option (g)	Minimum PSV (h)	Maximum AAV (i)

a) Enter text, to define the drawing or model number which contains the location where the permitted pavement option is to be constructed.
b) Enter text, to define the documentation which contains design level information.
c) Enter text, to define the location of the pavement option [e.g. road name, direction, lane].
d) Enter a number in units of m, to define the start chainage for the pavement option.
e) Enter a number in units of m, to define the end chainage for the pavement option.
f) Enter one or more values, from options as defined in Flexible pavement option of WSR 202/001, to define the corresponding reference for work specific pavement construction requirements.
g) Enter a value, from options as defined in Pavement foundation options of WSR 201/002 or WSR 201/003, to define the pavement foundation option for use with the pavement option.
h) Enter text, to define the minimum Polished Stone Value (PSV) of the coarse aggregate or coated chippings in the surface course.
i) Enter text, to define the maximum Aggregate Abrasion Value (AAV) of the coarse aggregate or coated chippings in the surface course.

Almost all work specific requirements are in table format

Accompanied by Specifier Instructions

How to get access to the spreadsheets…

https://www.standardsforhighways.co.uk/search?q&pageNumber=1&suite=MCHW&type=IFS

MCHW document set filters

Specification for Highway Works (SHW)

The Specification for Highway Works (SHW) provides constructor requirements for the implementation of highway works and is to be used as the base specification in highway contracts.

Instructions for Specifiers (IfS)

The Instructions for Specifiers (IfS) is a set of instructions to the Specifier; that is, the party compiling the contract specification, on the inclusion of contract specific requirements using Works Specific Requirements (WSR) templates. The IfS documents also replicate the SHW requirements within their texts to aid the compilation of the contract-specific requirements.

Method of Measurement for Highway Works (MMHW)

The Method of Measurement for Highway Works (MMHW) provides the methods of measurement to be used for the preparation of bills of quantities.

How to get access to the spreadsheets…

https://www.standardsforhighways.co.uk/search?q&pageNumber=1&suite=MCHW&type=IFS

MCHW • **CP 202 - Instructions for specifiers for CC 202 Flexible pavement construction**

PUBLISHED

Discipline: Pavement

Lifecycle stage: Contract Preparation

Countries applicable:
England, Northern Ireland, Scotland, Wales

Document type: IFS

Summary:
This document gives specifier instructions with respect to flexible pavement construction.

Open Download PDF **Version:** 1.0.0 **Issued:** 30 Sep 2025 **Match:** Exact

How to get access to the spreadsheets…

Discipline: Pavement **Issued:** Oct 2025

Lifecycle Stage: Contract Preparation **Version:** E/1.0.1

You are viewing the version of this document applicable in: England

View and download the document:

Open Download PDF

This document is also available to view online in PDF format. Click here to open.

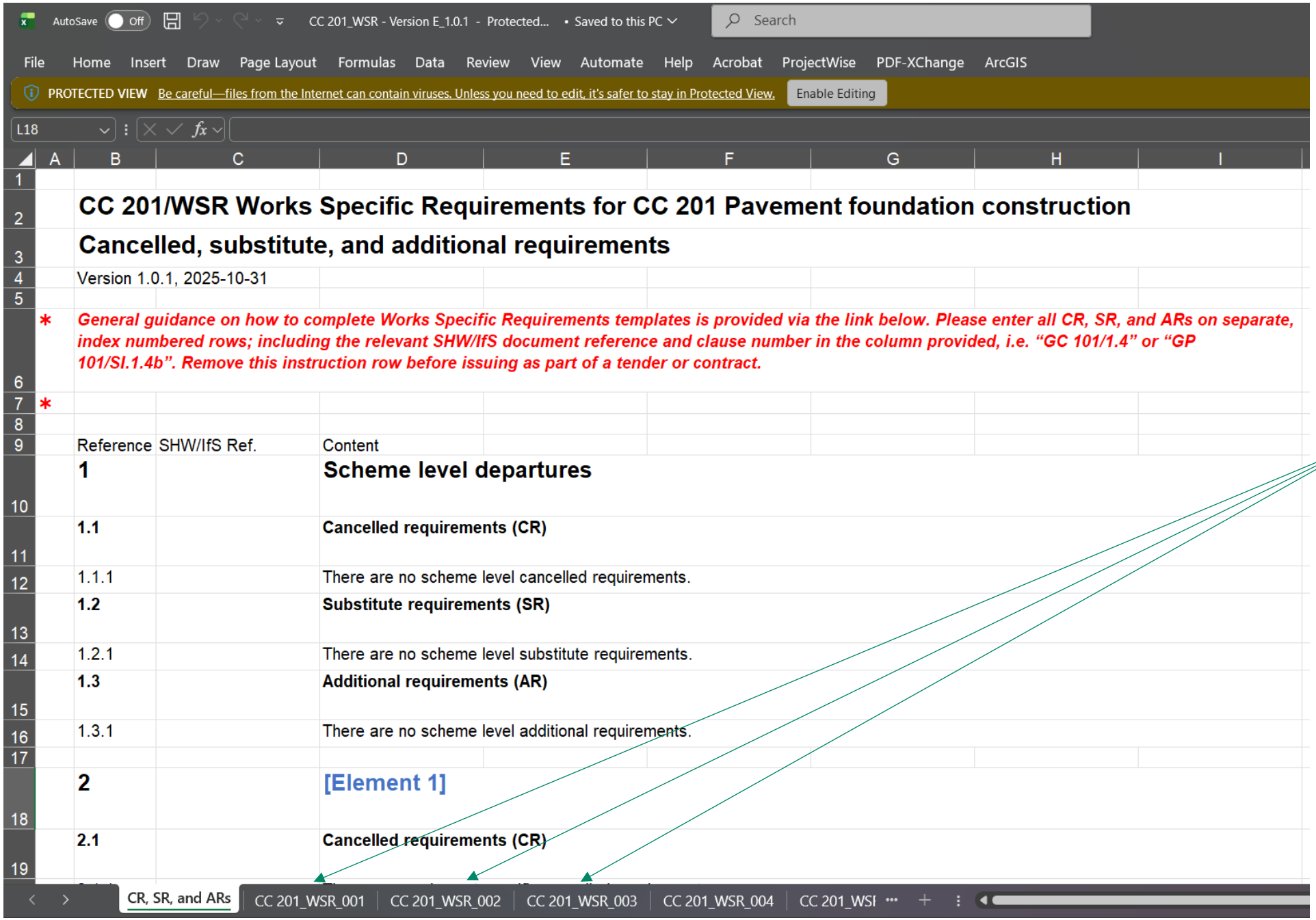
Additional documents

WSR Template

CC 201/WSR - Works Specific Requirements for CC 201 Pavement foundation construction E/1.0.1 **.ods**

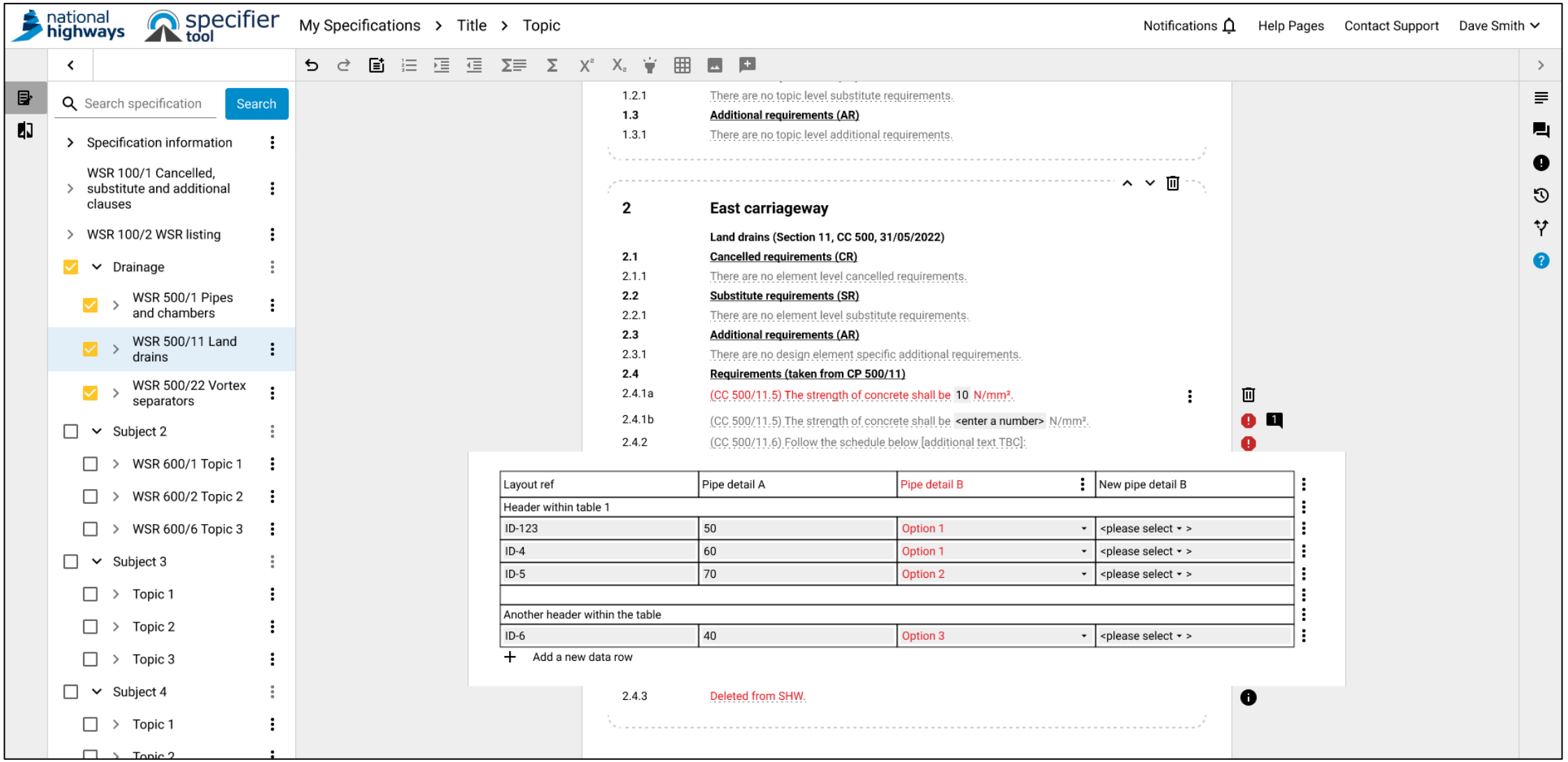
13.9 kB

Download



WSRs for each section

Work specific requirements – Example format

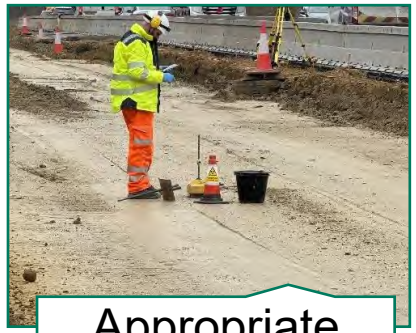


Technical changes

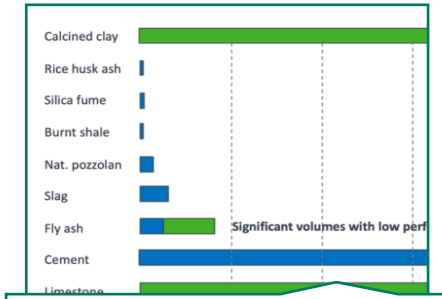
Drivers

- Safety
- Customer experience
- Decarbonisation
- Technology

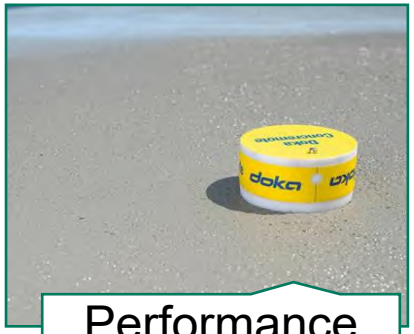
Changes



Appropriate verification



Lower carbon binders/technologies



Performance specifications

More construction options

Intended outcomes

- Lower carbon construction
- Reduced construction time
- Reduced departures from standard
- Reduced people on site

What does this all mean to you?

What this might mean to you - MCHW content - recap

The MCHW is concerned with all '***elements***' (i.e. products, materials, systems, and activities) needed to build and maintain a Trunk Road.

Specification for Highway Works (SHW)

- What the ***element*** is
- Testing to show the ***element*** is correct
- How the ***element*** needs to be installed
- Testing to show installation is correct
- Tolerances for the finished work
- Evidence and records to be provided to the Client

Instructions for Specifiers (IfS)

+ Drawings

- What ***elements*** to use, and where
- Any specific testing
- Any specific instructions

PLUS

Any additions or deviations from the SHW requirements

Method of Measure for Highway Works (MMHW)

+ Bill of Quantities

- Units for measuring ***elements***
- Rules for how each ***elements*** is measured
- Quantity ranges against which unit rate applies

What might this mean to you?

Key points:

- The SHW only includes elements that are permitted on trunk roads network in the UK.
- Technical requirements for products are written for the trunk road network.
- There have been technical updates to support key National Highways and Devolved Administration drivers:
    - Safety
    - Decarbonisation
    - Customer experience
    - Technology

Implications:

- The specification may not be relevant to your network.
- Old and new MCHW documents cannot be mixed as this may lead to contractual problems due to technical changes.
- You might need to change your documents due to changes to the clause referencing system.
- To use the new MCHW, you need to use the new Work Specific Requirements spreadsheets.

What this might mean to you – actions for implementation of new SHW

Challenge	Suggested actions
My document cross references the old SHW	Remove old Clause reference and review whether clause references are needed. If needed, cross reference the new document with the subject heading only – do not reference clause numbers as they can change!
I use a product that's not included	Depending on complexity of requirements for the product: Low complexity – Add 'additional requirement' in WSR spreadsheets Higher complexity - Write separate document for your requirements cross reference in WSR spreadsheets
I have different installation requirements	Cancel, add or substitute clauses in WSR spreadsheets
I have different testing requirements	Cancel, add or substitute clauses in WSR spreadsheets

Work specific requirements can be reasonably flexible…

Requirement 1.1.4 CC 202/1.4 Pavement course materials shall be:

Pavement course material reference (a)	Material designation (b)	Document and section reference (c)
SC1	SMA 10 Surf 40/60 PSV 60 971AR	971AR LHDG Specification
BC1	AC 20 Dense Bin 40/60 rec	CC 202.19

General requirements for recipe asphalt concrete surface, binder and base courses

Requirement 1.1.1 CC 202/19.1 Recipe asphalt concrete surface, binder and base courses shall be:

Pavement course material reference (a)	Installation requirements (b)	Surface level requirements (c)
BC1	LHDG Specification	LHDG Specification

Cross reference to your documents, but check for contradictions first!

Thank you for listening. Questions?

Joe.Poulsom@aecom.com