

**TII Standards Roadshow Webinar – 17<sup>th</sup> May 2022**

***Site Documentation Traceability,  
and  
Sampling, Storage and Retention  
of  
Bituminous Mixtures***

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# Checks and Key Points – Good Practice



TII Publications Number	TII Publication Title	Set	Published
CC-PAV-04011	Hot Rolled Asphalt and Coated Chippings – Checks and Key Points	Technical	January 2019
CC-PAV-04013	Surface Dressing – Checks and Key Points	Technical	March 2020
CC-PAV-04014	Stone Mastic Asphalt – Checks and Key Points	Technical	March 2020
CC-PAV-04015	Asphalt Concrete – Checks and Key Points	Technical	December 2020
CC-PAV-04016	Site Documentation and Traceability	Technical	April 2022
CC-PAV-04017	Sampling Storage and Retention	Technical	April 2022

## The Objective

- The aim of the Series is
  - to provide Employer's Representatives with background information
  - to enhance the understanding of the written requirements of the specifications
  - to show examples of good practice and poor practice.
  - Specification references provided in order for the user to easily locate the actual specification requirement
- The aim of the Series is not
  - a specification but should be read in conjunction with The Contract Specific
  - And does not purport to cover every aspect of Asphalt Concrete nor any legal interpretation of the Specification for Road Works.

# The Content

1. Introduction
2. Checklist of Items required – Prior to commencing Works
3. Checklist of Items required – During and After Completion of the Works
4. Key Points – During and After Completion of the Works

# Example - Checks

## Prior to Commencing Design (Surface Dressing Only)

- ✓ Site Assessment
- ✓ Road Hardness
- ✓ Macrotexture
- ✓ Traffic Volume
- ✓ Traffic Speed
- ✓ Chippings
- ✓ Season

## Prior to Commencing Works

- ✓ Type Testing
- ✓ Declaration of Performance
- ✓ CE Marking
- ✓ Constituents
- ✓ Product Composition
- ✓ Chippings (SD)
- ✓ Works Proposals

## During and After Works





- ✓ Works Requirements
- ✓ Monitoring of Construction
- ✓ Sampling, Storage & Retention
- ✓ Site Documentation & Traceability

Item	Specification Reference	Task	Done ✓
CE Marking	CC-SPW-00900 Clause 5 CC-SPW-00900 Table 7 CC-SPW-00900 Table 8	Review documentation for compliance with specified SMA mixture:	
		Constituents - Type testing, Declaration of Performance, CE Marking - CC-GSW-00900 Table NG1.2a	
		Product Composition - Type testing, Declaration of Performance, CE Marking - CC-GSW-00900 Table NG1.2a	
Works Proposals	CC-SPW-00900 Clause 10.1.2	Contractor to submit works proposals to include:	
		Laying and compaction plant – CC-SPW-00900 Clause 10.1.7 & 10.1.9 & 10.1.9.3	
		Working in different climatic conditions - CC-SPW-00900 Clause 10.1.5, 10.1.5.1 & CC-GSW-00900 NG 10.1.5	
		Formation of joints - CC-SPW-00900 Clause 10.1.8 & CC-GSW-00900 NG 10.1.8	
		Further reading CC-GSW-00900 Clause NGA 10	

# Example – Key Points









## Example Key Points:

- HRA Mixture
- Chip Condition & Size
- Macrotexture
- Rate of Spread
- Embedment
- Joints
- Weather
- Chip loss
- Ride quality

Key point	Level	Example Photographs		Specification References and notes
HRA Mixture	Good			<p>The composition of the HRA mixture should be sufficiently robust to support the coated chippings and sufficiently malleable to hold the coated chippings in place.</p> <p>The manufacturing process can also play a significant role in the ability of the HRA mixture to support the coated chippings.</p>
	Poor			<p>The temperature of the HRA mixture should be within the limits contained in Tables 5 and 6 of CC-SPW-00900.</p> <p>Insulated transport is essential to minimise heat loss prior to use. CC-SPW-00900 Clause 10.1.3 stipulates the requirements for transport.</p> <p>Particularly wet or cold ambient conditions can affect the ability of the HRA mixture to support the coated chippings.</p> <p>Paver tamper settings can be altered to assist the process of supporting the coated chippings.</p> <p>Truck inspections on site should only take place if hopper material or screed indicates poor bearing capacity.</p>

## Example Key Points:

- Aggregates
- Design Checks
- Stockpile Management
- Binder Emulsion Storage
- Equipment
- Weather
- Substrate
- Installation
- Traffic Control & Aftercare
- Specific Issues

Key point	Level	Example Photographs		Specification References and notes
Aggregates	Good shape Good size Clean			CC-SPW-00900 Table 17 & Table 18 The shape and size of the chippings influences the performance of the surface dressing. The measurement of Average Least Dimension (ALD) provides a better measure of shape as it takes size and Flakiness Index (FI) into account. The ALD is used in the analytical design method along with traffic volumes, macrotexture, hardness and days to first frost to determine the rate of application of binder and rate of spread of chippings.
	Poor shape Good size Clean			A desktop application for calculating ALD and undertaking an analytical design is available at: <a href="https://web.tii.ie/adt/#/pavement">https://web.tii.ie/adt/#/pavement</a> Access to the desktop application requires initial registration with TII.
Key point	Level	Example Photographs		Specification References and notes
Aggregates continued	Poor shape Poor size			Good bond between the chippings and the binder is essential. Chippings covered in fines (dust) reduce this bond, leading to unacceptable levels of chip loss from the mat. CC-GSW-00900 Clause NG 10.2.3.1.2 The fines content is determined by the producer under FPC procedures. FPC applies up to the point of delivery, therefore samples can be taken at the point and time of delivery.
	Good shape Good size Dusty			Taking joint samples with the producer reduces the opportunity for disputes. Samples are taken in accordance with EN 932-1. A simple check for chipping cleanliness is to rub a handful of chippings between both hands; if a significant residue is left on the hands then the chippings should be tested as they are likely to be too dirty for use.

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**Sampling, Storage and  
Retention of Bituminous  
Mixtures – Checks and Key  
Points**

CC-PAV-04017  
April 2022

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**Site Documentation &  
Traceability of Bituminous  
Mixtures – Checks and Key  
Points**

CC-PAV-04016  
April 2022

Overview / Purpose

- To improve the retention and availability of relevant documentation.
- To improve the availability of reference samples for analysis.
- To ensure that in the event of a subsequent investigation, sufficient records are available.

1. It is the Designers responsibility to ensure the selected product is fit for the intended purpose and durable for its expected life.
2. It is the Contractors responsibility to source and verify a product that complies as a minimum with the required performance characteristics of the design.
3. Further the products must be installed and verified into the Works in accordance with the specified requirements.



# Site Documentation & Traceability of Bituminous Mixtures (CC-PAV-04016)

## Overview / Purpose

- To improve the retention and availability of relevant documentation:
  - Product approval,
  - Works proposals,
  - Laying/as-built records,
  - Traceability of materials
  - Content of close out reports
- To ensure that in the event of a subsequent investigation, sufficient records are available.

## 2. Checklist of items required prior to commencing works:

Item	Specification References	Task
General	All Contract documentation	Where documents and records are reviewed, it is in collated and stored in a format that permits ease of access. The Implementing Authority is responsible for the access to the scheme.
Compliance with Contract specific Appendix requirements	Appendix:	Review the contractor proposals against the relevant requirements:
	7/1 Flexible & flexible composite	<ul style="list-style-type: none"> <li>Do the proposed products match the product specifications?</li> </ul>
	7/3 End performance surface dressing	<ul style="list-style-type: none"> <li>Does the coarse aggregate PSV and AAV meet the requirements in the appendices?</li> </ul>
	7/21 Recipe surface dressing	<ul style="list-style-type: none"> <li>Are there any particular requirements in the specification that have not been addressed in the submission from the contractor?</li> </ul>
	7/4 Bond coat	<ul style="list-style-type: none"> <li>For End performance surface dressing and recipe surface dressing, has a certificate been submitted?</li> </ul>
	7/10 Microsurfacing	<ul style="list-style-type: none"> <li>For High friction surfacing, has a prTAIT certificate been submitted?</li> </ul>
	7/11 High friction surfacing	<ul style="list-style-type: none"> <li>For High friction surfacing, has a prTAIT certificate been submitted?</li> </ul>
CE Marking	CC-SPW-00900 Clause 3,4,5,6,7,8	Review documentation for compliance with the specified mixture:
	CC-SPW-00900 Tables 1,4,7,10,17,24a (Constituents)	Constituents - Type Test Reports, Declaration of Performance, CE Marking. See procedural guidelines in CC-GSW-00900 Table NG1.2a for Bituminous Mixtures and Table NG1.2b for Microsurfacing and Surface Dressing
	CC-SPW-00900 Tables 2,5,8,11,18,24c&d (Product Composition)	Product Composition - Type Test Reports, Declaration of Performance, CE Marking. See procedural guidelines in CC-GSW-00900 Table NG1.2a for Bituminous Mixtures and Table NG1.2b for Microsurfacing and Surface Dressing
Works Proposals	CC-SPW-00900 Clause 10.1.2 (Bituminous Mixtures)	Review Contractor's Work's Proposals, to include: <ul style="list-style-type: none"> <li>How traceability of the material in the Works will be addressed – CC-SPW-00900 Clause 10.1.2 (v)</li> </ul>
		Laying and compaction plant – CC-SPW-00900 Clause 10.1.7 & 10.1.9

**TII**  
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**TII Publications**

GE PE DN CC GP AM RE

**Site Documentation & Traceability of Bituminous Mixtures – Checks and Key Points**

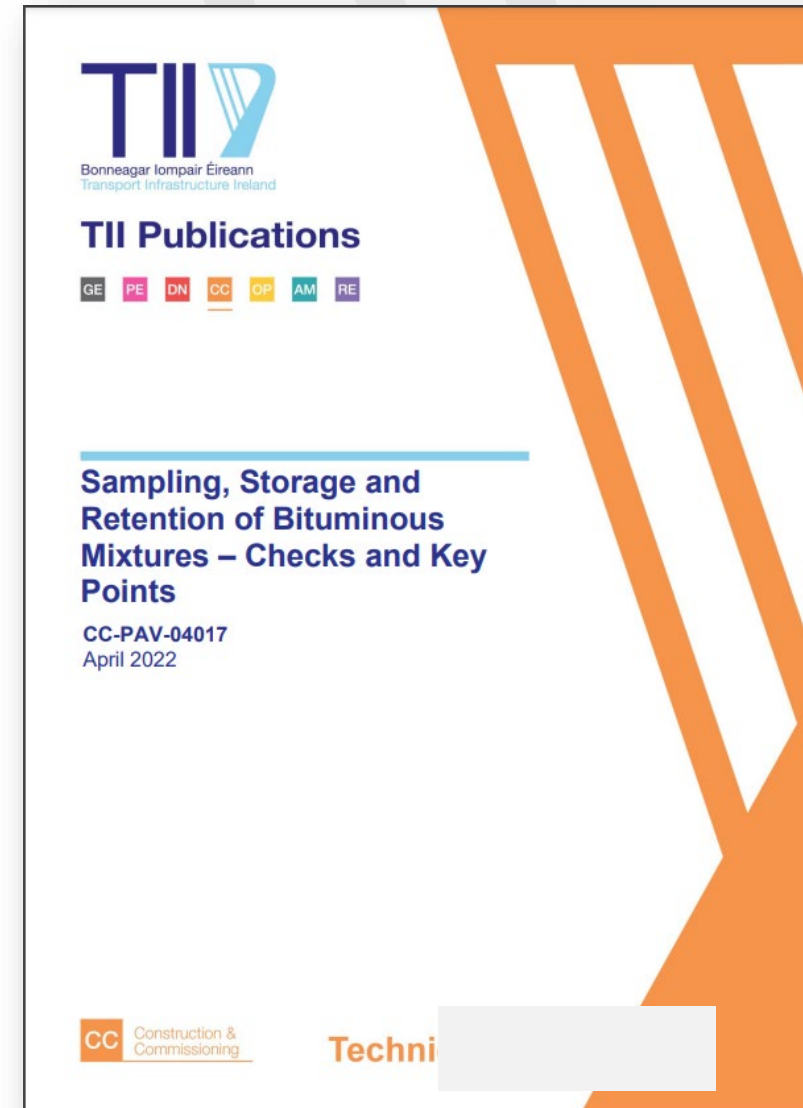
CC-PAV-04016  
April 2022

CC Construction & Commissioning **Technical**

# Sampling, Storage & Retention of Bituminous Mixtures (CC-PAV-04017)

## Overview / Purpose

- Aims to improve the availability of reference samples for analysis and subsequent investigations.
- Outlines the required tasks for sampling, storage and retention of samples.
- Describes the Quality Control testing function
- How split samples may be used for compliance checks.
- Best practice for the storage of samples and retention methods
- Ensure ease of access of samples post-construction.



Thanks for  
listening

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