



Bonneagar Iompair Éireann
Transport Infrastructure Ireland

TII Publications



The Technical Delivery of Minor Pavement Schemes

CC-PAV-04021
December 2020

About TII

Transport Infrastructure Ireland (TII) is responsible for managing and improving the country's national road and light rail networks.

About TII Publications

TII maintains an online suite of technical publications, which is managed through the TII Publications website. The contents of TII Publications is clearly split into 'Standards' and 'Technical' documentation. All documentation for implementation on TII schemes is collectively referred to as TII Publications (Standards), and all other documentation within the system is collectively referred to as TII Publications (Technical).

Document Attributes

Each document within TII Publications has a range of attributes associated with it, which allows for efficient access and retrieval of the document from the website. These attributes are also contained on the inside cover of each current document, for reference.

TII Publication Title	<i>The Technical Delivery of Minor Pavement Schemes</i>
TII Publication Number	<i>CC-PAV-04021</i>

Activity	<i>Construction & Commissioning</i>		Document Set	<i>Technical</i>
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TII Publications Website

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TII Publications



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1. Introduction

The aim of this Technical Document is to serve as the starting point for the practitioner for the technical delivery of minor pavement schemes. The document provides the steps to take including references to existing TII Publications necessary to deliver a scheme.

There are a considerable number of TII documents that are cross referenced within the overall delivery process, that can be quite complex to understand with regards to critical versus informative issues. It is recognized that given current structures very often engineers may not have had an opportunity to develop a sufficiently broad perspective of pavements over the progress of their career.

When used in an electronic format, this document provides links to relevant TII standards and technical information.

The Document is not a specification but should be read in conjunction with the TII Publications referred to. It is not the intention for this Technical Document to replace the requirements of the TII Publications, but to help in locating and interpreting the requirements.

2. Using the document

Section 3 contains a Table with the column headings: Stage, Document, Document Section and Deliverable.

Stage

The stage is the chronological order in which the documents are required to be accessed in order to address each aspect of the scheme delivery. The documents are grouped into characteristic elements:

Pavement type

Considers whether a new pavement is being constructed or an existing pavement is being maintained. Also considers the use of Flexible or Composite pavement types, product options and whether a departure is required.

Traffic assessment

Includes the calculation of design traffic and options to determine traffic flow.

Foundation assessment

Includes the testing necessary to determine the strength of the sub grade and whether improvements are necessary.

Unbound Materials

Refers to the design thickness calculations and options for the Capping and Subbase layers.

Bound Material – General

Considers the properties of Bound material types and includes the total design thickness calculations for Flexible and Composite pavement types.

Bound Material – Base

Considers the properties of Asphalt and Hydraulically Bound mixture types for the Base layer.

Bound Material – Binder course

Considers the mixture types for the Binder course layer.

Bound Material – Surface course or treatment

Considers the mixture types for the Surface course layer including the location and the aggregate properties to address skid resistance.

Product Approval

Includes the CE conformity requirements and other approval requirements for High Friction Surfacing, Low Energy Bound Mixtures, Retexturing and Repair Systems.

Contract documents

Includes links to the Appendices that may form part of the contract and a document cross check.

Works

Details the Specification references that the Works are to comply with.

Works assistance

Links to supporting documents that provide checks to undertake and key points relating to specific pavement materials.

Document

The Document column contains the TII document reference; for ease of reference, this is also a hyperlink to the document on the TII Publications website.

Note: It is the users responsibility to ensure that the latest version of the document is referred to.

Document Section

The Document Section column contains the specific location within the TII document that provides the detail needed to address the Stage. The specific reference should also be considered in the context of the entire TII Publication.

Deliverable

Where required, the expected outcome from reviewing the TII document is referred to in this column. This deliverable will usually form part of the series of documents necessary to deliver the scheme.


3. Steps

Stage	Document	Document Section	Deliverable	
Pavement type				
What is required: A or B?			Pavement layers to be constructed and pavement type to be used	
A. New pavement being constructed	DN-PAV-03021	Sec 1.10		
B. Existing pavement requiring maintenance treatment	AM-PAV-06050	Sec 6 & 7		
	DN-PAV-03021	Sec 1.12		
Consider pavement types: Flexible	GE-PAV-01006	Sec 2.5		
	DN-PAV-03021	Sec 8.1		
Composite	DN-PAV-03021	Sec 8.18		
Consider product options	DN-PAV-03074	Contents		
Is departure from Standard required?	DN-PAV-03021	Sec 1.5	Apply for Departure	
Traffic assessment				
Calculation of design traffic Calculating traffic flow Existing pavement: permanent traffic counter (TMU) or scheme specific count	PE-SMG-02002 PE-PAG-02038 www.nratrafficdata.ie		Design traffic in msa for carriageway lanes	
Foundation assessment				
Determine sub grade CBR	DN-PAV-03021	Sec 3.16		
In Situ Dynamic Cone Penetrometer testing	DN-PAV-03021	Sec 3.59	Test Results	
Sub grade improvements necessary?	Flexible DN-PAV-03021	Sec 4.10	Foundation layer requirements	
	Composite DN-PAV-03021	Sec 5.10		
Unbound Material				
Capping & Subbase layer thickness	Flexible: DN-PAV-03021	Sec 4.10	Capping & Sub base layer requirements	
	Composite: DN-PAV-03021	Sec 5.10		
Capping layer type	DN-PAV-03021 & CC-SPW-00600	Sec 3.32 CI 613		
Subbase layer type	DN-PAV-03021 & CC-SPW-00800	Sec 3.36 CI 801		
Bound Material – General				
Product properties	DN-PAV-03024	Sec 2.3 & 2.4		
Flexible: Combined asphalt layers thickness	DN-PAV-03021	Sec 4.15	Total pavement thickness required	
Composite: HBM Base and asphalt thickness	DN-PAV-03021 DN-PAV-03074	Sec 5.15 Sec 2.3.4		
Bound Material – Base				
Choosing a Base material	DN-PAV-03024	Sec 3.4	Base layer requirements	
Flexible: Asphalt	CC-SPW-00900	CI 3		
Composite: Hydraulically Bound Mixture	CC-SPW-00800	CI 810		

Stage	Document	Document Section	Deliverable
Bound Material – Binder course			
Choosing a Binder material	DN-PAV-03024	Sec 3.3	Binder layer requirements
Flexible & Composite: Asphalt	CC-SPW-00900	CI 3 (AC) & CI 5 (SMA)	
Bound Material – Surface course or treatment			
Choosing a Surfacing material	DN-PAV-03024	Sec 3.2	Surface layer requirements
Permitted options	DN-PAV-03023	Table 2.1	
Consider differing needs: Carriageway(s) / cycleway / footway	Carriageway DN-PAV-03023 Cycleway DN-GEO-03047 Footway DN-PAV-03026	Sec 2.2	
Choose PSV & AAV of aggregate in Surface	DN-PAV-03023	Table 3.1 & Table 3.2	Aggregate Properties
Flexible & Composite: Asphalt or Treatment	CC-SPW-00900		
Product Approval			
Conformity of Bituminous mixtures	DN-PAV-03074 CC-SPW-00900	Sec 2.4 CI 1.2	
HFS, LEBM, Retexturing, PRMS, LRMS	DN-PAV-03075		
Contract documents			
Specification Appendices (as required):	CC-GSW-00700		Contract Documents for Tender
Particular Requirements for Bituminous Bound Materials		Table NG 7/1	
Particular Requirements for Unbound and Cement Bound Mixtures		Table NG 7/2	
Permitted pavement options		Appendix 7/1	
Surface Dressing Product (End Performance)		Appendix 7/3	
Bituminous Sprays		Appendix 7/4	
Road Construction Details		Appendix 7/5	
Breaking up redundant pavement		Appendix 7/6	
Cold Milling (Planing)		Appendix 7/9	
Microsurfacing		Appendix 7/10	
High Friction Surfacing		Appendix 7/11	
Low Energy Bound Mixtures		Appendix 7/12	
Recipe Surface Dressing		Appendix 7/21	
Testing to be carried out by the Contractor Samples to the Employer's Representative	CC-GSW-00100 CC-GSW-00100	Appendix 1/5 Appendix 1/6	

Stage	Document	Document Section	Deliverable
Documentation check	DN-PAV-03074	Sec 1.2	Cross check
Works			
In accordance with	CC-SPW-00900 CC-SPW-00700	Sec 10	
Works assistance			
Hot Rolled Asphalt Checks and Key Points	CC-PAV-04011		
Stone Mastic Asphalt Checks and Key Points	CC-PAV-04014		
Surface Dressing Checks and Key Points	CC-PAV-04013		
Asphalt Concrete Checks and Key Points	CC-PAV-04015		



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