

# Introduction and Overview of TII Publications

Albert Daly, Head of Research and Standards (TII)

## TII Standards Training 2017

Athlone	09 <sup>th</sup> May 2017
Carrick on Shannon	11 <sup>th</sup> May 2017
Cork	16 <sup>th</sup> May 2017
Dublin	18 <sup>th</sup> May 2017

# Standards - Objectives

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*“...promote quality and consistency of approach in relation to the design and construction of road and bridge projects”*

*...to achieve an appropriate balance of economy, safety, sustainability and durability on road schemes”*



# Standards – Drivers for Change

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- Sustainability
- Ongoing developments in international standards
- Compliance with the EU regulations
- Technical developments (materials, products, systems)
- Research - both internal and external
- Feedback from National Roads Projects e.g. MMARC Contracts
- TII Policy Development
- Input from industry

# Standards – Monitoring

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- Highways England website
  - UK DMRB and MCHW Developments
- EU TRIS
  - Draft European Technical Standards & Regulations
- CEN TC 226
  - Draft Developments in ENs for Road Equipment
- NSAI Website
  - Draft Developing Irish National Standards
- Other international websites e.g. Austroads

# TII Publications System

# Legislative Remit to Specify Standards

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- TII has a range of specific functions under The Roads Act 1993 to 2015
- Clause 19 includes the following:

*“(1) The Authority may, in relation to national roads or proposed national roads, do all or any of the following:*

*.....*

*(e) subject to section 15B(3), **specify standards in relation to design, construction or maintenance works to be complied with by a person, road authority or public authority carrying out such works;**”*

# Background to TII Publications

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- Historically through the NRA DMRB and MCDRW
- TII wanted a new structure to:
  - promote the new TII brand
  - have fully stand-alone TII documentation
  - better integrate Standards with workflows
  - consideration of wider NRA and RPA technical documentation
  - maintain a coherent and logical structure

# Background to TII Publications

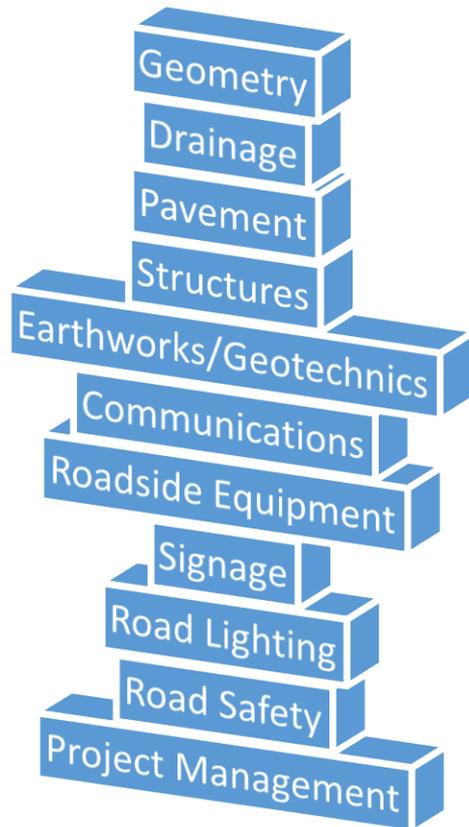
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Objectives of the TII Publications System:

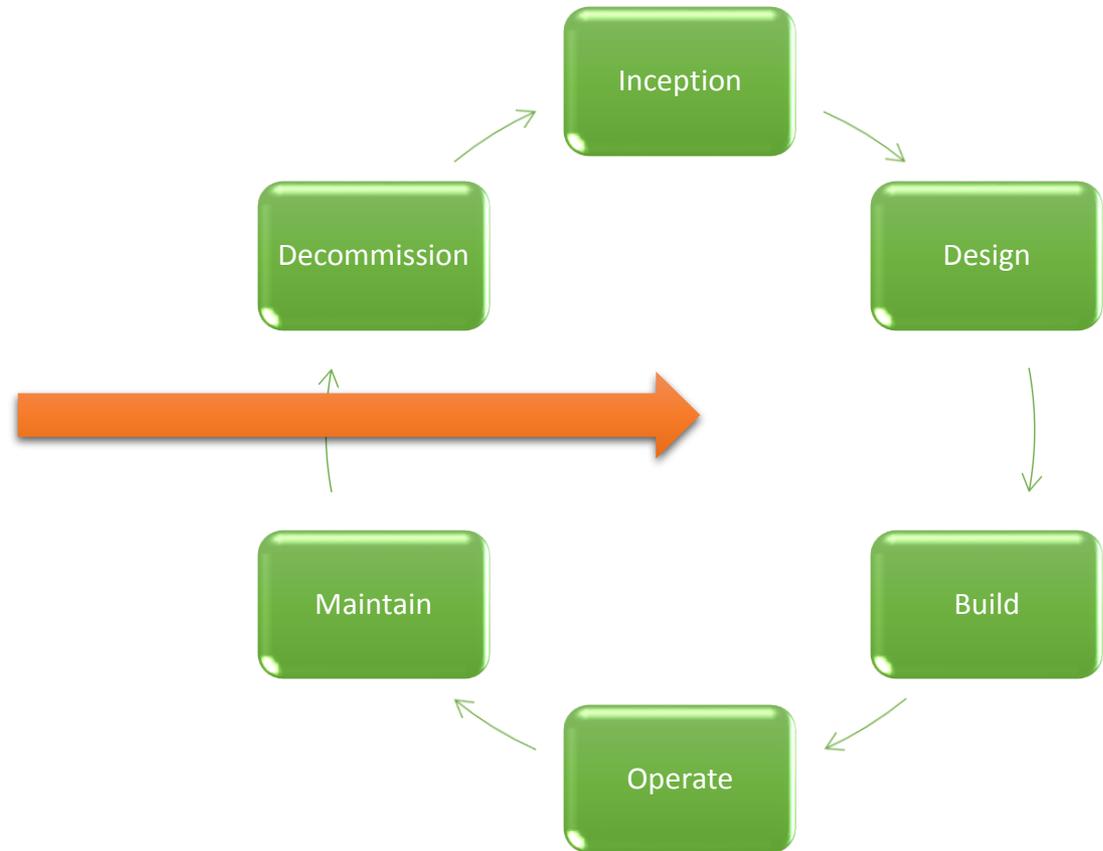
- Simple, over-arching structure;
- Modular-based;
- Flexible sub-structure;
- Increased web-based functionality; and
- Electronic document management system.

# Background to TII Publications

## Discipline Based Manuals



## Project Lifecycle



# 7 'Pillar' Activities

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General (GE)

Planning and Evaluation (PE)

Design (DN)

Construction and Commissioning (CC)

Operations (OP)

Asset Management and Maintenance (AM)

Research (RE)

# Discipline 'Streams'

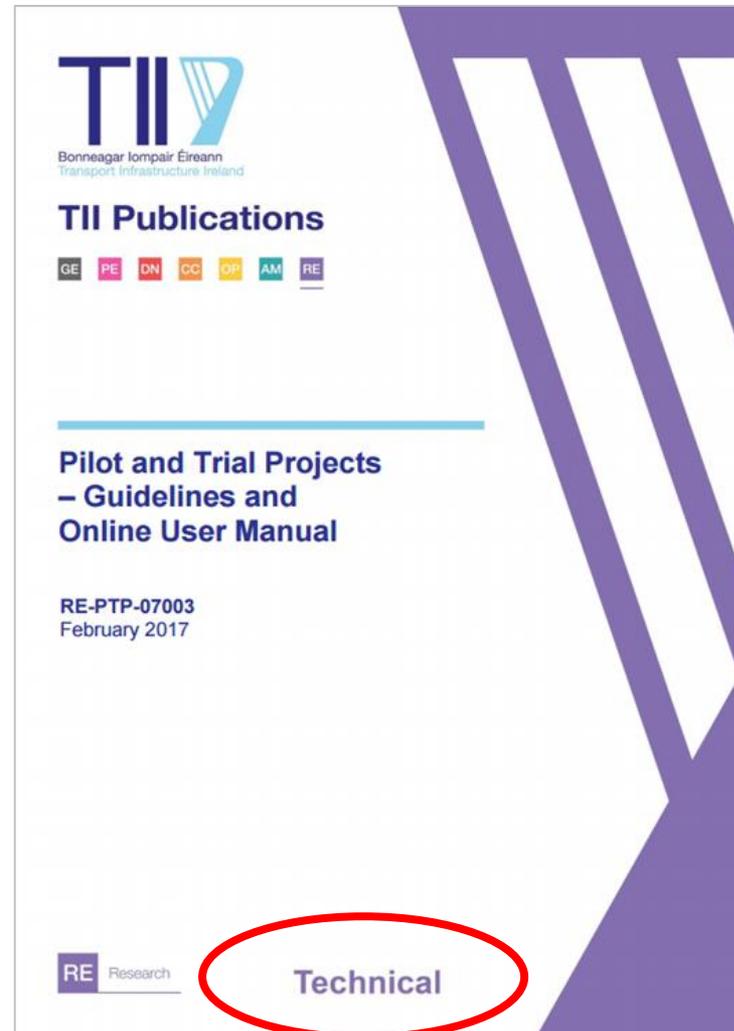
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## Design (DN)



- |  |  |   |
|--|--|---|
| <input type="checkbox"/> Archaeology (ARC)                   | <input type="checkbox"/> Lighting (LHT)        | <input type="checkbox"/> Track Alignment and Clearances (TAC)     |
| <input type="checkbox"/> Buildings (BLD)                     | <input type="checkbox"/> Other Documents (OTH) | <input type="checkbox"/> Traffic (TRA)                            |
| <input type="checkbox"/> Drainage (DNG)                      | <input type="checkbox"/> Pavement (PAV)        | <input type="checkbox"/> Trackworks (TWK)                         |
| <input type="checkbox"/> Design Management (DNM)             | <input type="checkbox"/> Road Equipment (REQ)  | <input type="checkbox"/> Tunnels (TUN)                            |
| <input type="checkbox"/> Environment (ENV)                   | <input type="checkbox"/> Rail Systems (RSY)    | <input type="checkbox"/> Urban Architecture and Landscaping (UAL) |
| <input type="checkbox"/> Earthworks (ERW)                    | <input type="checkbox"/> Rolling Stock (RSS)   | <input type="checkbox"/> Urban / Rural Interface (URI)            |
| <input type="checkbox"/> Geometry (GEO)                      | <input type="checkbox"/> Structures (STR)      | <input type="checkbox"/> Utilities (UTL)                          |
| <input type="checkbox"/> Intelligent Transport Systems (ITS) | <input type="checkbox"/> Safety (STY)          |   |

# Standards and Technical Documents



# Outline of TII Publications

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## TII Publications (**Standards**) includes:

- TII Standards (BDs, GDs, HDs, TDs, etc..)
- TII Advice Notes (BAs, HAs, TAs, etc...
- Specification for Roadworks
- Notes for Guidance to the Specification for Roadworks
- Method of Measurement for Roadworks
- Notes for Guidance to the Method of Measurement for Roadworks
- Road Construction Details (RCDs)

# Outline of TII Publications

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## TII Publications (**Technical**) includes:

- Interim Advice Notes
- Technical Bulletins
- Research Papers
- Technical Reports
- Future developments...light rail?

# Document Title and Numbering System

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Document title consists of:

- Activity
- Stream
- Reference number

## TII Publication Number

**DN-GEO-03031**

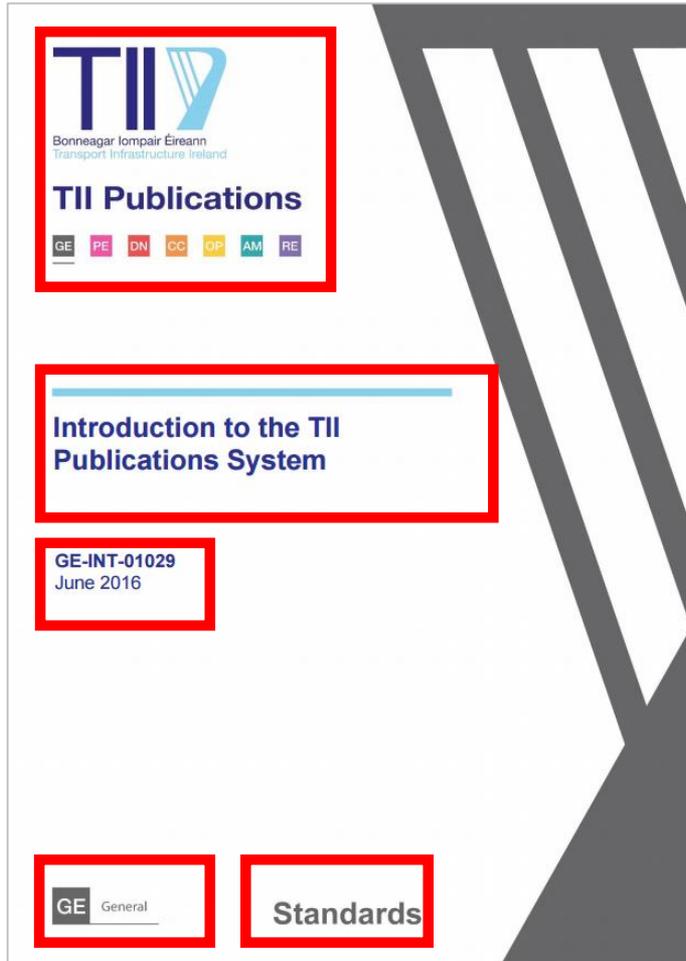
*(DN for Design) – (GEO for Geometry) – (Reference No.)*

## Historical Reference

**NRA TD 9**

*(TD for Traffic Design) – (Reference No. 9)*

# Document Covers



TRANSPORT INFRASTRUCTURE IRELAND (TII) PUBLICATIONS			
<b>About TII</b>			
Transport Infrastructure Ireland (TII) is responsible for managing and improving the country's national road and light rail networks.			
<b>About TII Publications</b>			
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).			
<b>Document Attributes</b>			
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.			
<b>TII Publication Title</b>	<i>Introduction to the TII Publications System</i>		
<b>TII Publication Number</b>	<i>GE-INT-01029</i>		
<b>Activity</b>	<i>General (GE)</i>	<b>Document Set</b>	<i>Standards</i>
<b>Stream</b>	<i>Introduction (INT)</i>	<b>Publication Date</b>	<i>June 2016</i>
<b>Document Number</b>	<i>01029</i>	<b>Historical Reference</b>	-
<b>TII Publications Website</b>			
This document is part of the TII publications system all of which is available free of charge at <a href="http://www.tiipublications.ie">http://www.tiipublications.ie</a> . For more information on the TII Publications system or to access further TII Publications documentation, please refer to the TII Publications website.			
<b>TII Authorisation and Contact Details</b>			
This document has been authorised by the Director of Professional Services, Transport Infrastructure Ireland. For any further guidance on the TII Publications system, please contact the following:			
Contact:	Standards and Research Section, Transport Infrastructure Ireland		
Postal Address:	Parkgate Business Centre, Parkgate Street, Dublin 8, D08 DK10		
Telephone:	+353 1 646 3600		
Email:	<a href="mailto:infoPUBS@tii.ie">infoPUBS@tii.ie</a>		
Page i			

# Document Covers



Bonneagar Iompair Éireann  
Transport Infrastructure Ireland

TII Public

GE PE DN CC



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Transport Infrastructure Ireland

TII Publication

GE PE DN CC OP AM



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TII Publication

GE PE DN CC OP



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TII Publication

GE PE DN CC OP AM



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Transport Infrastructure Ireland

TII Publication

GE PE DN CC OP AM



Bonneagar Iompair Éireann  
Transport Infrastructure Ireland

TII Publications

GE PE DN CC OP AM RE

Departure and Specification  
(including dated June 2013)

GE-GEN-01005  
March 2013

Road Safety In Assessment

PE-PMG-02001  
June 2012

Vegetated Drainage  
for Road Runoff

DN-DNG-03063  
March 2015

Specification for Road Works Series  
and Service D Amendment N  
May 2015)

CC-SPW-00500  
March 2015

The Design of Bridges

AM-STR-06008  
June 2014

Pilot and Trial Projects  
– Guidelines and Online User Manual

RE-PTP-07003  
February 2017

GE General

PE Planning & Evaluation

DN Design

CC Construction & Commissioning

AM Asset Management & Maintenance

RE Research

Technical

# TII Publications Website



[Transport Infrastructure Ireland main site](#)

[HOME](#) [RECENT CHANGES](#) [WHO WE ARE](#) [SEARCH](#)

## Welcome to TII Publications

TII's online suite of standards and Technical publications related to national road and light rail networks in Ireland

Design of stru

**SEARCH**

- Interim Requirements for the Use of Eurocodes for the Design of Road Structures (including Geotechnical Works) **GE**  
GE-POL-01008 (NRA IAN 02/11)
- Design of Corrugated Steel Buried Structures with Spans Greater Than 0.9 Metres and up to 8 Metres [and Correction, February 2002] **DN**  
DN-STR-03003 (BD 12)
- Design of Support Structures for Roadside Furniture **DN**  
DN-STR-03018 (NRA BD 94)
- The Design of Concrete Highway Bridges and Structures with External and Unbonded Prestressing **AM**  
AM-STR-06016 (NRA BA 58)
- The Design of Concrete Highway Bridges and Structures - Use of BS 5400: Part 4: 1990 **AM**  
AM-STR-06027 (NRA BD 24)
- The Design of Buried Concrete Box and Portal Frame Structures **AM**  
AM-STR-06029 (NRA BD 31)
- The Design of Concrete Highway Bridges and Structures with External and Unbonded Prestressing **AM**  
AM-STR-06026 (NRA BD 58)

### Outline of

TII maintains  
Publications. T  
'Technical' do  
All documenta  
TII Publication  
collectively re  
available for

### Recent Changes

View and updated TII Publications  
Publication published recently

### Word Look

Current list of anticipated publications and  
related publication date

### Move to Standards

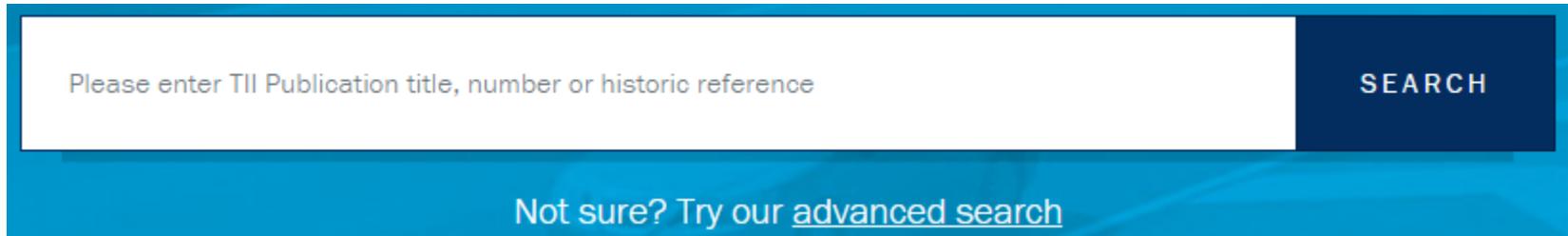
Find website for application or  
document of Departures to TII Publications

### Document Library

Library of non-technical TII documentation on  
the main TII website

# Searching Documents

## Search options based on stored metadata



The image shows a search interface with a white input field on the left containing the placeholder text "Please enter TII Publication title, number or historic reference". To the right of the input field is a dark blue button with the word "SEARCH" in white capital letters. Below the input field and button is a blue banner with the text "Not sure? Try our [advanced search](#)" in white.

- TII Publications number (DN-GEO-03031, CC-SPW-00500)
- Historical Reference (i.e. NRA TD 9, Series 500, etc..)
- Word in Document Title (Road, Link, etc...)
- Activity (Design or DN etc...)
- Stream (e.g. Geo or Geometry, DNG or Drainage)
- Advanced search...

# Website – Advanced Searching



[Transport Infrastructure Ireland main site](#)

[HOME](#) [RECENT CHANGES](#) [WHO WE ARE](#) [SEARCH](#)

[Home](#) > [Advanced Search](#)

## Showing all document streams

[Refine by activity](#)

Select all

Collaboration Projects - Europe (OPE)

Collaboration Projects - Ireland (OPI)

Construction Management (CPM)

Drainage (DNG)

General (GEN)

Geometry (GEO)

Guidance on Specification for Works (GSW)

Intelligent Transport Systems (ITS)

Introduction (INT)

Pavement (PAV)

Policy (POL)

Project Management (PMG)

Requirements for Measuring and Pricing (RMP)

Road Equipment (REQ)

Safety (STY)

Specification for Works (SPW)

Standard Construction Details (SCD)

Strategic Management (SMG)

Structures (STR)

Technical Bulletins (TBU)

Only show me

documents that are

or

- All Blocks
- AM** Asset Management & Maintenance
- CC** Construction & Commissioning
- DN** Design
- GE** General
- PE** Planning & Evaluation
- RE** Research

# Website – Search Results

**REFINE RESULTS BY:**

Activities / Streams

2 selected



Set

Standards and Technical



Type

All



Live filter by keyword

Filters

Download as Microsoft Excel (.csv) - 4 documents

4 Documents found

All

None

Invert

**DESIGN**

- [DN-GEO-03031 - Road Link Design](#) *NRA TD 9* *Apr 2017* *Published*
- [DN-GEO-03032 - Road Link Design for Type 2 and Type 3 Dual Carriageways](#) *NRA TD 10* *Dec 2007* *Withdrawn*

**CONSTRUCTION & COMMISSIONING**

- [CC-SCD-00009 - Road Type and Cross-Section - Slip Roads, Interchange Links and Loops : 1 Lane](#) *RCD/000/9* *Apr 2014* *Published*
- [CC-SCD-00010 - Road Type and Cross-Section - Slip Roads, Interchange Links and Loops : 2 Lane](#) *RCD/000/10* *Apr 2014* *Published*

# Website – Document Page



## DN-GEO-03031 - Road Link Design

TII Publication Number	DN-GEO-03031	Publication Date	April 2017
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Activity	<b>DESIGN</b>	Stream	Geometry (GEO)
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Document Set	Standards	Historical Reference	NRA TD 9
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Version Type	Published
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Version History	<b>April 2017</b> February 2012 November 2011 December 2010 April 2007 January 2005 July 2004 April 2003 June 2001 December 2000
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# Website – Useful Links

## Hyperlinked List of all Current Docs

### Outline of TII Publications

TII Publications is an online suite of technical documentation relating to national road and light rail schemes.

TII Publications are categorised as Standards or Technical. All documentation for implementation on National Road schemes is collectively referred to as TII Publications (Standards), and all other documentation within the system is collectively referred to as TII Publications (Technical).

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Link to Document  
Page

TII Publications  
List of Current Documentation

TII Publication Number	TII Publication Title	Activity	Stream	Document Set	Historical Reference	Publication Date
<a href="#">AM-PAV-06045</a>	Management of Skid Resistance	Asset Management & Maintenance (AM)	Pavement (PAV)	Standards	NRA HD 28	November 2011
<a href="#">AM-PAV-06047</a>	Interim Guidelines for Pavement and Maintenance Works	Asset Management & Maintenance (AM)	Pavement (PAV)	Technical		January 2007
<a href="#">AM-PAV-06049</a>	Pavement Asset Repair and Renewal - Scheme Approval Procedure (including Erratum No. 1 dated June 2015)	Asset Management & Maintenance (AM)	Pavement (PAV)	Standards	NRA HD 30	June 2015
<a href="#">AM-PAV-06050</a>	Pavement Assessment, Repair and Renewal Principles (including Erratum No. 1 dated June 2015 and Erratum No 2, dated January 2016)	Asset Management & Maintenance (AM)	Pavement (PAV)	Standards	NRA HD 31	March 2015
<a href="#">AM-STR-06001</a>	The Use of BS 5400: Part 10: 1980 - Code of Practice for Fatigue	Asset Management & Maintenance (AM)	Structures (STR)	Standards	NRA BA 9	June 2014
<a href="#">AM-STR-06002</a>	The Assessment of Road Bridges and Structures	Asset Management & Maintenance (AM)	Structures (STR)	Standards	NRA BA 16	June 2014
<a href="#">AM-STR-06003</a>	The Use of BS 5400: Part 3: 1982	Asset Management & Maintenance (AM)	Structures (STR)	Standards	NRA BA 19	December 2014
<a href="#">AM-STR-06004</a>	Early Thermal Cracking of Concrete	Asset Management & Maintenance (AM)	Structures (STR)	Standards	NRA BA 24	December 2014
<a href="#">AM-STR-06005</a>	Inspection and Repair of Concrete Road Structures	Asset Management & Maintenance (AM)	Structures (STR)	Standards	NRA BA 35	June 2014
<a href="#">AM-STR-06006</a>	The Assessment of the Fatigue Life of Corroded or Damaged Reinforcing Bars	Asset Management & Maintenance (AM)	Structures (STR)	Standards	NRA BA 38	June 2014
<a href="#">AM-STR-06007</a>	The Assessment of Reinforced Concrete Half-Joints	Asset Management & Maintenance (AM)	Structures (STR)	Standards	NRA BA 39	June 2014
<a href="#">AM-STR-06008</a>	The Design of Integral Bridges	Asset Management & Maintenance (AM)	Structures (STR)	Standards	NRA BA 42	June 2014
<a href="#">AM-STR-06009</a>	Strengthening, Repair and Monitoring of Post-Tensioned Concrete Bridge Decks	Asset Management & Maintenance (AM)	Structures (STR)	Standards	NRA BA 43	June 2014

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# Website – Downloads Section

## Downloads

- + [Project Appraisal Guidelines](#)
- + [Sample Appendices associated with Specification for Works \(CC-SPW documents\)](#)
- + [Sample Appendices associated with retrofitting of Vehicle Restraint Systems \(DN-REQ-03079\)](#)
- + [Template for Pilot and Trial Projects](#)
- [Compiled Sets of SCDs](#)

- [Series-000-SCDs-compiled-set.pdf](#)
- [Series-100-SCDs-compiled-set.pdf](#)
- [Series-300-SCDs-compiled-set.pdf](#)
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- [Series-1300-SCDs-compiled-set.pdf](#)
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Departures  
website

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Standards  
Related  
Material

# Standards – Queries

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## General TII Publications queries:

- To be sent to [infoPUBS@tii.ie](mailto:infoPUBS@tii.ie)
- Query assessed by TII Standards Section
- TQ raised if technical response required

*..... may lead to a more comprehensive review and possible standards update*

## Specific queries in relation to

### Departures from standards:

- To be sent to [infoDEPS@tii.ie](mailto:infoDEPS@tii.ie)
- Assessed by TII Departures Team
- Feedback to TII Standards as required

# Topics for Discussion

Time	Topic	Speakers	TII Publication
10:20am to 10:50am	<i>Project Appraisal Guidelines</i>	Dan Brennan	PE-PAG-02009 to PE-PAG-02039
10:50am to 11:20am	<i>Changes to the RMP</i>	Don Shine	CC-RMP-0XXX
<i>11.20am to 11.35am Tea &amp; Coffee</i>			
11:35am to 12:35pm	<i>Road Geometry</i>	Alastair de Beer Peter Adams	DN-GEO-03031, DN-GEO-03036, DN-GEO-03047, DN-GEO-03028.
12:35pm to 1:00pm	<i>Geometric Design of Junctions</i>	Peter Adams	DN-GEO-03060
<i>1.00pm to 1.45pm Lunch</i>			
1:45pm to 2:10pm	<i>Pavement</i>	Eddie Winterlich	DN-PAV-03074, CC-SPW-00900
2:10pm to 2:40pm	<i>Vehicle Restraint Systems</i>	Herbert Nyamakope	DN-REQ-03079 DN-REQ-03034
2:40pm to 2:55pm	<i>Transition/Terminal Assessment Procedures</i>	Eoin Doyle	DN-REQ-03080 DN-REQ-03081
2:55pm to 3:15pm	<i>Pilots and Trials</i>	Thomas Connell	RE-PTP-07003
3:15pm to 3:25pm	<i>Forward Look and Course Close</i>	Eoin Doyle	NA
<i>3.25pm End of training course</i>			

# Questions & Answers