

Updates to the Requirements for Measuring and Pricing

Don Shine, Arup

TII Standards Training 2017

Athlone	09 th May 2017
Carrick on Shannon	11 th May 2017
Cork	16 th May 2017
Dublin	18 th May 2017

Introduction

Agenda

- Measurement in Contracts
- Irish Public Works Contracts | 2016 Amendments
- RMP and GMP | TII Publications (Standards)
- Amendments to the Method of Measurement
- Closing remarks

Measurement in Contracts

Measurement in Contracts

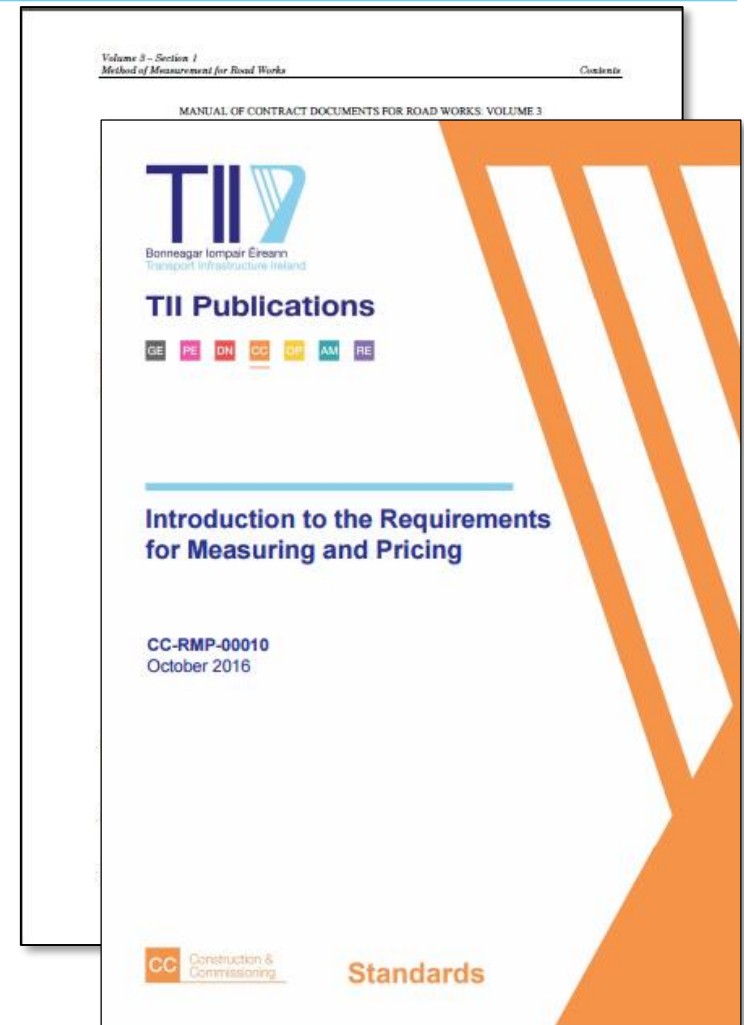
“Measurement is the first step that leads to control and eventually to improvement. If you can’t measure something, you can’t understand it. If you can’t understand it, you can’t control it. If you can’t control it, you can’t improve it.”

H. James Harrington

International Performance Improvement Expert

Measurement in Contracts

- Method of Measurement for Road Works (MMRW) issued in 2000
 - Based on UK MCHW
 - For use with IEI Form of Contract
 - Developed & expanded over time
 - Updated since 2007 for use with the GCCC PWC Forms
 - Part of TII Publications in 2016



Measurement in Contracts



Construction Procurement Reform

GCCC PWC Forms introduced in 2007

- **PW-CF1 - Building Works designed by the Employer**
- PW-CF2 - Building Works designed by the Contractor
- **PW-CF3 - Civil Engineering Works designed by the Employer**
- PW-CF4 - Civil Engineering Works designed by the Contractor
- **PW-CF5 - Minor Building and Civil Engineering Works designed by the Employer**
- The current number of PWC Forms ranges from PW-CF1 to PW-CF11

Measurement in Contracts

- Detailed Design prepared by the Employer's Representative
- Contract Documents compiled by the Employer's Representative, and including;
 - Works Requirements (Volume A) consisting of;
 - General Requirements for Contract;
 - Specification Appendices developed for Contract; and
 - Drawings defining the works
 - Form of Tender & Schedules (Volume B); and
 - **Pricing Document (Volume C), including the Bill of Quantities**



Irish Public Works Contracts | 2016 Amendments

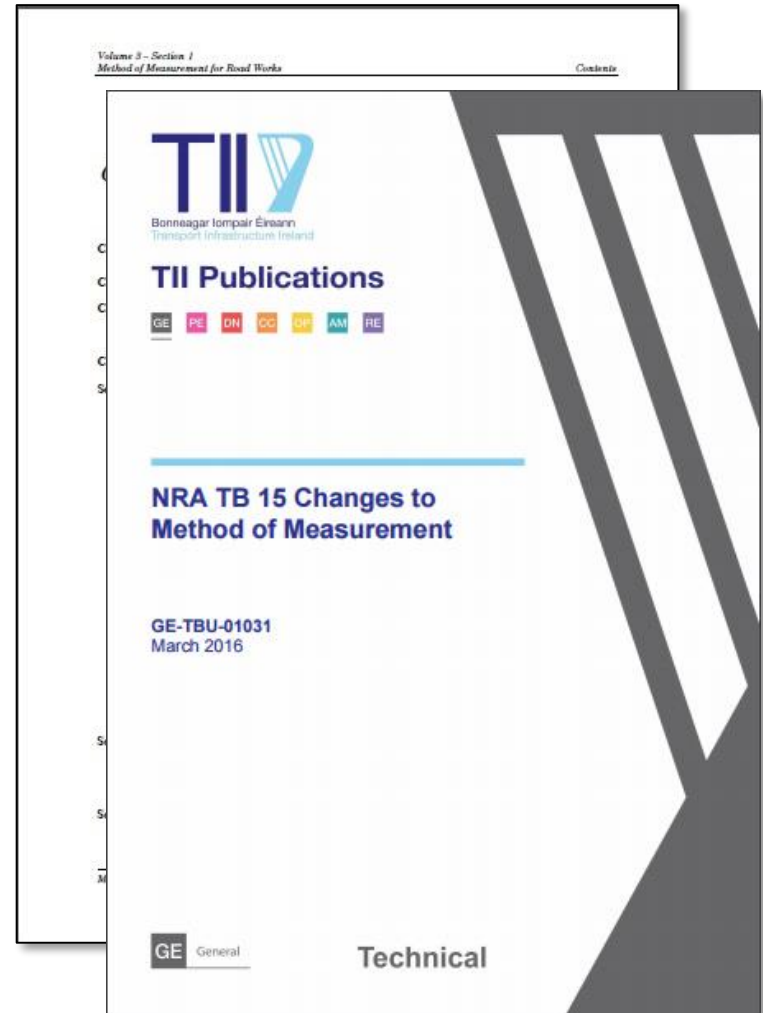
Irish Public Works Contracts | 2016 Amendments

- Fixed price, lump-sum PWC contracts introduced in 2007
- GCCC considered experiences with Public Works Contracts (*between 2013 and the end of 2015*)
- 4 interim recommendations (June 2014);
 - Change to status of the Bill of Quantities
 - Direct engagement of key specialist works contractors
 - Most Economically Advantageous Tender (MEAT) award for contracts above €2m
 - Overhaul the dispute resolution mechanisms in the contracts

<http://constructionprocurement.gov.ie/wp-content/uploads/Information-Sessions-Combined-Slides.pdf>

Measurement in Contracts

- DPER Circular 01/16 revising the GCCC PWC Forms (Jan 2016) & NRA TB 15 Changes to Method Measurement (March 2016)
 - **The Pricing Document now a compensation event**
 - Direct tendering for Specialists Works
 - Introduction of Dispute Management procedure
 - Introduction of a Standing Conciliator



Implications for Users



- All relevant Contract documentation shall implement the new system from 1 June 2016
- However, reference to specific TII Publication Numbers for individual documentation was not required to be updated initially
- A check for conflicts with references within all updated Contract documentation should be undertaken

Implications for Users

- From the start of 2017
All Contracts are required to be updated to reflect the correct references to the TII Publications system, including all TII Publication Numbers.



Pricing Document – Summary of Intent

- Pricing Document for Employer Design is the Bill of Quantities;
 - Prepared to an approved method of measurement, as defined in the Contract
 - The only document included in the Pricing Document
 - Exclusive of any option to transfer risk of quantities



*(Guidance Note GN 1.5.3 – The Pricing Document
<http://constructionprocurement.gov.ie/contracts/>)*

Pricing Document – TII Implementation (Works)

- Update of Preparation of the Bill of Quantities including;
 - Specific changes to remove re-measurement references
 - Review of all parts of the Method of Measurement
 - Amendments of various minor discrepancies and inconsistencies (ongoing based on feedback)
 - Compiler amendments to the published measure only allowed under Approved Departure from TII (Refer to the Preamble to the BOQ)



Pricing Document – TII Implementation (Services)

- Scope of services in TII's standard conditions of engagement for consultancy services should now include:
 - Preparation of a fully measured Bill of Quantities;
 - Sufficient timeframe for the full development of the Bill of Quantities to the required standard; and
 - Sufficient scope for the development of the Bill of Quantities to be consistent with the Specification Appendices and Drawings



Specialists – Summary of Intent



- For Employer Design Contracts, Specialists may be procured separately, directly by the Contracting Authority, and in parallel with the Main Works Contract
- The Contractor shall enter a sub-contract for a Specialist Contract Sum, which will form part of the Contract Sum with the Contractor
- The Contractor will be entitled to tender, in their tender, a percentage addition for each Specialist which will form part of their Contract with the Employer

(Guidance Note GN 2.3.3 – Specialists and the Public Works Contract - <http://constructionprocurement.gov.ie/contracts/>)

Specialists - TII Implementation



- Update of Preparation of the Bill of Quantities including;
 - Specific changes in the Preambles to cover pricing of items related to Specialists
- Addition of a Specialist Works item in the measurement of Preliminaries for;
 - Reserved sum
 - General attendances
 - Special attendances
 - Management
 - Contractor's profit

Dispute Management & Standing Conciliator

Summary of Intent

- Introduction of a dispute resolution process for the main GCCC PWC Forms, including meetings of the Project Board with the intent of reaching a resolution.
- In respect of a Standing Conciliator;
 - Appointment required where anticipated Contract Sum will be in excess of €10million;
 - Employer's option where anticipated Contract Sum will be less than €10million
- The intention behind the introduction of the Standing Conciliator is to encourage proper engagement between the Parties



(Guidance Note GN 3.1.1 – Dispute Resolution)

Dispute Management & Standing Conciliator

TII Implementation

- Addition of a Standing Conciliator item in the measurement of Preliminaries for Reserved sum
- Item coverage text has been added to include;
 - establishing and maintaining knowledge of the parties, documentation and attendance at site regularly;
 - Chairing Project Board Meetings;
 - Reviewing a complete set of the contract documents;
 - Any other duties agreed by the parties



Changes between March and October 2016

- GE-TBU-01035 Summary of Changes to the RMP Documents (February 2017)
 - A number of RMP documents were updated between the March and October 2016 publications
 - These updates were summarized within GE-TBU-01035
 - In general the amendments could be characterised as minor in nature but should be reviewed
- <http://www.tiipublications.ie/library/GE-TBU-01035-01.pdf>

Volume 3 – Section 1
Method of Measurement for Road Works

Contents

TIIP
Transport Infrastructure Ireland

TI Standards Section – Technical Bulletin
Changes to RMP Documents
February 2017

GE-TBU-01035 (February 2017)

Summary of Changes to the Requirements for Measuring and Pricing (RMP) Documents
A number of RMP documents were updated between the March and October 2016 Publications. These updates have been summarised in Table 1 below for information.

Table 1 – Summary of Changes of RMPs and GMPs

TIIP Publications	Title	Updates
CC-RMP-00010	Introduction to the Requirements for Measuring and Pricing	The testing reference and the supply of samples reference in Preamble no. 2 have been updated. A requirement to obtain prior approval in writing has been added for any changes to the standard items or method of measurement or Preambles within the RMP.
CC-RMP-00100	Requirements for Measuring and Pricing Preliminaries	Traffic Management and temporary diversion requirements have been updated. Requirements for Project Supervisor for Construction Stage (PSCS), Safety File and As-Built records have been added. New obligations from the Public Works contracts amendments have been added, including provisions for Specialist works and Standing Conciliator. Further miscellaneous minor updates.
CC-RMP-00200	Requirements for Measuring and Pricing of Site Clearance	Partial demolition and temporary fencing has been clarified. Credit value for site clearance materials has been included.
CC-RMP-00300	Requirements for Measuring and Pricing of Fencing and Environmental Noise Barriers	Stack proofing of gates and stiles have been included. General formatting and reference have been amended.
CC-RMP-00400	Requirements for Measuring and Pricing of Road Restraint Systems (Vehicle and Pedestrian)	General formatting has been amended.
CC-RMP-00500	Requirements for Measuring and Pricing of Drainage and Service Ducts	The item coverage for headwalls has been extended. Requirements for the measurement of headwalls and outfall works and the like to pipes exceeding 900mm internal diameter have been clarified.
CC-RMP-00600	Requirements for Measuring and Pricing of Earthworks	General formatting amendments.

Transport Infrastructure Ireland
Parkgate Business Centre, Parkgate Street, Dublin 8, D08 DK10
Tel: +353 1 646 3600 Email: info@TIBS.tii.ie Web: <http://www.tii.ie>

Changes to the RMP

TII Publications	Title	Updates
CC-RMP-00010	Introduction to the Requirements for Measuring and Pricing	The testing reference and the supply of samples reference in Preamble no. 2 have been updated. A requirement to obtain prior approval in writing has been added for any changes to the standard items or method of measurement or Preambles within the RMP.
CC-RMP-00100	Requirements for Measuring and Pricing Preliminaries	Traffic Management and temporary diversion requirements have been updated. Requirements for Project Supervisor for Construction Stage (PSCS), Safety File and As-Built records have been added. New obligations from the Public Works contracts amendments have been added, including provisions for Specialist works and Standing Conciliator. Further miscellaneous minor updates.
CC-RMP-00200	Requirements for Measuring and Pricing of Site Clearance	Partial demolition and temporary fencing has been clarified. Credit value for site clearance materials has been included.
CC-RMP-00300	Requirements for Measuring and Pricing of Fencing and Environmental Noise Barriers	Stock proofing of gates and stiles have been included. General formatting and reference have been amended.
CC-RMP-00400	Requirements for Measuring and Pricing of Road Restraint Systems (Vehicle and Pedestrian)	General formatting has been amended.
CC-RMP-00500	Requirements for Measuring and Pricing of Drainage and Service Ducts	The item coverage for headwalls has been extended. Requirements for the measurement of headwalls and outfall works and the like to pipes exceeding 900mm internal diameter have been clarified.
CC-RMP-00600	Requirements for Measuring and Pricing of Earthworks	General formatting amendments.

TII Publications	Title	Updates
CC-RMP-00700	Requirements for Measuring and Pricing of Pavements	Cold milling item coverage expanded. Inconsistencies with the linear drainage requirements in CC-RMP-01100 corrected. Repair systems has been clarified. General formatting amendments.
CC-RMP-01100	Requirements for Measuring and Pricing of Kerbs, Footways and Paved Areas	Linear drainage channel systems were included.
CC-RMP-01200	Requirements for Measuring and Pricing of Traffic Signs and Road Markings	Tack coat terminology changed to bond coat. Clips and clamps added to item coverage for permanent traffic signs. Brackets and fittings added to item coverage for traffic signal heads. Reference corrected.
CC-RMP-01300	Requirements for Measuring and Pricing of Road Lighting Columns and Brackets	General formatting amendments.
CC-RMP-01400	Requirements for Measuring and Pricing of Electrical Work for Road Lighting and Traffic Signs	Measurement of cabling expanded to include location. New items added for reuse of feeder pillars. Item coverage for cables extended. General formatting amendments.
CC-RMP-01500	Requirements for Measuring and Pricing of Motorway Communications	Measurement of Communications Cabling and Trench for Communication Cable expanded to include more location Features. New items added for modifications to existing communications equipment. General formatting amendments.
CC-RMP-01600	Requirements for Measuring and Pricing of Piling and Embedded Retaining Walls	References to cast iron under Steel Sheet Piles removed. General formatting amendments. Extra Over item descriptions clarified.
CC-RMP-01700	Requirements for Measuring and Pricing of Structural Concrete	No change in documentation.
CC-RMP-01800	Requirements for Measuring and Pricing of Structural Steelwork	General formatting amendments.
CC-RMP-01900	Requirements for Measuring and Pricing of Protection of Steelwork Against Corrosion	The sections of CC-RMP-01900 applicable to new steelwork installations versus the sections applicable to the maintenance of existing installations has been better defined. General formatting amendments.
CC-RMP-02000	Requirements for Measuring and Pricing of Waterproofing for Structures	Item coverage expanded for Surface Impregnation of Concrete and Surface Impregnation of Coatings and Concrete. General formatting amendments.

Changes to the RMP

TII Publications	Title	Updates
CC-RMP-02100	Requirements for Measuring and Pricing of Bridge Bearings	Item coverage expanded to include labelling for inspection. General references and formatting amendments.
CC-RMP-02300	Requirements for Measuring and Pricing of Bridge Expansion Joints and Sealing of Gaps	Itemisation reformatted. Item coverage for joint sealant expanded.
CC-RMP-02400	Requirements for Measuring and Pricing of Brickwork, Blockwork and Stonework	General formatting amendments.
CC-RMP-02500	Requirements for Measuring and Pricing of Special Structures	Reference amendments.
CC-RMP-02700	Requirements for Measuring and Pricing of Watermains, Utilities and Accommodation Works	General formatting amendments.
CC-RMP-02800	Requirements for Measuring and Pricing of Trenchless Installation of Road Drainage and Service Ducts	General formatting amendments.
CC-RMP-02900	Requirements for Measuring and Pricing of CCTV Survey of Road Drainage Systems	General formatting amendments.

- All enquiries or comments on this document should be sent by e-mail to infoPUBS@tii.ie.

Implementation of PWC Changes by TII

- April 2016**
 - Update of Preparation of Bills of Quantities, including the Preamble to the Bill of Quantities
- June 2016**
 - NRA MCDRW forms part of TII Publications (Standards); and
 - Change of 'Method of Measurement' to 'Requirements for Measuring and Pricing (RMP)'
- Oct 2016**
 - Minor referencing and amendment changes to be part of a full suite of RMP and GMP updates
 - Technical Bulletin – 01035 issued, summarizing the changes to the RMP documents between March and Oct 2016
- Feb 2017**



**RMP and GMP |
TII Publications (Standards)**

TII Publications Website



TII Publications

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For further information on TII Publications, please refer to Introduction to the TII Publications System, [GE-INT-01029](#)

> Recent Changes

View a summary of recent changes to TII Publications

> Forward Look

Anticipated updates to TII Publications and estimated publication dates

> Departure from Standards [↗](#)

Dedicated website for application or management of Departures from Standards

> TII Library [↗](#)

Access other TII documents on the main TII website

<http://www.tiipublications.ie/>



Implementation Overview



- TII Publication Numbers are now used
- TII Publications (Standards) has replaced NRA Standards
- New ‘Collective’ references are also now in place, particularly for the Construction and Commission (CC) activity, e.g.;
 - Specification for Works (SPW)
 - Guidance on Specification for Works (GSW)
 - Requirements for Measuring and Pricing (RMP)
 - Guidance on Measuring and Pricing (GMP)
 - Standard Construction Details (SCD)

TII Publication Numbers

Example:

CC-RMP-00500

(CC for Construction and Commissioning)

(RMP for Requirements for Measuring and Pricing)

(Numeric Reference No.)

Historical References	TII Publication Numbers
Series 500	CC-SPW-00500
NG Series 500	CC-GSW-00500
MM Series 500	CC-RMP-00500
MMNG Series 500	CC-GMP-00500
RCD/500/20	CC-SCD-00520

Implementation for Contracts

- Amendments have been made to the key implementation documentation for Contracts (previously NRA MCDRW), including;

NRA MCDRW Ref	NRA MCDRW Title	TII Publication Number
Series 000	Specification	CC-SPW-00010
NG Series 000	Notes for Guidance to Specification	CC-GSW-00010
Vol 3, Part 1, Chapters I, II and III	Method of Measurement	CC-RMP-00010
Vol 3, Part 2, Chapters I, II and III	Notes for Guidance to Method of Measurement	CC-GMP-00010



Irish Public Works Contracts | Amendments to the Method of Measurement

Implementation for Contracts



- Amendment to the Preamble to the Bill of Quantities appears as follows;

Preambles to Bill of Quantities

- General Directions 1 The Requirements for Measuring and Pricing (RMP) in TII Publications (Standards) is published as a collective group of documents under the Construction and Commissioning activity within the TII Publications system. The Bill of Quantities has been prepared in accordance with the RMP.

Amendments to the Method of Measurement

- Requirement added that the TII's express permission is required to amend the Method of Measurement

Amendments to the Method of Measurement †

18 Amendments to the Method of Measurement are not advisable and in any case not permitted without the express permission of TII, as noted under Chapter II General Principles.

[Notes to compiler:

The Preambles to Bill of Quantities (duly completed) must be reproduced unaltered and bound in the Bill of Quantities.

*To be completed by compiler as appropriate.

† Where prior approval has been obtained in writing from TII to amend Chapter IV of the Method of Measurement in accordance with paragraph 1(b) of Chapter II, General Principles, this preamble should be the last numbered preamble and inserted immediately prior to the amendments.]

Amendments to the Method of Measurement

- To request a change in the Method of Measurement an Application for a Departure needs to be submitted to the TII
- The TII will then review and advise if a Departure is to be allowed

Series 500: Additional Group/Feature table for Paragraph 37 of CC-RMP-00500-05 as per attached Draft Preamble;		
Series 2600: Additional Paragraph 1 to 4 introduced as per attached Draft Preamble		
Departure Justification:		
Series 300: To cater for stonework walls;		
Series 500: To cater for larger pipe culverts;		
Series 2600:		
Other Depa		
None		
Additional It		
Please see at		
DMRB Refe		
CC-RMP-000		
DMRB Para		
Preambles to		
Comments:		
Departure Ap		
Departure Su		
Supporting		
N56KL Priority		
Status:		
1510 - bryan		
Application for a Departure from the 'NRA Design Manual For Roads And Bridges'		
General Information for Application No. 11144 (Your Ref: N56KL-D-RMP-001)		
Route Number:	Scheme:	Contract Type:
56	N56 Kilkenny to Letterilly Road Scheme	Traditional
Design Speed:	Traffic Flow and Composition (if applicable):	
55km/h	Approx. 4000 (Design Year)	
Carrageway Type / Cross Section:		
T3S		
Applicant Information:		
Applicant Name:	Contact Person and Contact Details:	
Anup Consulting Engineers	Name: Kieran Malone Email: kieran.malone@anup.com	
Applicants Departure Reference No:		
N56KL-D-RMP-001		
Departure Information:		
Departure Location and Chainage:		
The scheme is located approx. 4km northeast of Genties		
Departure Category:		
Not Specified		
Departure Type:		
Amendments to TII Requirements for Measuring and Pricing		
Standard Required by NRA DMRB:		
Departure required for any amendments to the Requirements for Measuring and Pricing		
Standard Provided:		
Series 300: Additional Item coverage for Paragraph 16 of CC-RMP-00300-04 as per attached Draft Preamble.		

Implementation for Contracts

- Approved Departures to the Method of Measurement are to be listed after Section 18 of the Preamble

<p>Alterations for Road Authorities</p>	<p>17</p>	<p>Not Used</p>
<p>Amendments to the Requirements for Measuring and Pricing</p>	<p>18</p>	<p>For the purposes of the Contract the Requirements for Measuring and Pricing is amended in accordance with the pages immediately following.</p>

Closing Remarks

- TII Publications has been introduced and the previous MMRW and guidance are now RMP and GMP
- All documents relating to the PWC can be located at: <http://www.tiipublications.ie/>
- TII's express permission is required to amend the Method of Measurement. The Method of Measurement should only be amended in project specific circumstances

**Updates to the Requirements for
Measuring and Pricing**

Questions & Answers

Thank You