

Standard Specifications
for
Road and Bridge Works
for
State Road Authorities

1998 Edition



Revision: Progress Update

Road Pavement Forum _Cape Town

K NAIDOO
8 MAY 2018

PROPOSED COTO SUITE OF DOCUMENTS

VOLUME 1	GENERAL CONDITIONS OF CONTRACT (FIDIC; GCC, ETC)
VOLUME 2	STANDARD SPECIFICATIONS FOR:
	2.1 ROADS AND BRIDGE WORKS 2.2 ROUTINE ROAD MAINTENANCE ??
VOLUME 3	CONTRACT DOCUMENT
VOLUME 4	ROADWORK DRAWINGS
VOLUME 5	STRUCTURES DRAWINGS
VOLUME 6	MATERIAL UTILISATION
VOLUME 7	ENVIRONMENTAL MANAGEMENT PLAN

FORMAT OF REVISED COTO STANDARD SPECIFICATIONS (VOLUME 2)

- **CHAPTER 1: GENERAL**
- **CHAPTER 2: SERVICES**
- **CHAPTER 3: DRAINAGE**
- **CHAPTER 4: EARTH AND LAYER WORKS: MATERIALS**
- **CHAPTER 5: EARTH AND LAYER WORKS: CONSTRUCTION**
- **CHAPTER 6: CONCRETE LAYERS**
- **CHAPTER 7: REPAIR & REHABILITATION OF CONCRETE LAYERS**
- **CHAPTER 8: PRE-TREATMENT AND REPAIR OF EXISTING SURFACES**
- **CHAPTER 9: ASPHALT LAYERS**
- **CHAPTER 10: SEALS AND MICRO-SURFACING**
- **CHAPTER 11: ANCILLARY ROAD WORKS**
- **CHAPTER 12: GEOTECHNICAL APPLICATIONS**
- **CHAPTER 13: STRUCTURES**
- **CHAPTER 14: REPAIR & REHABILITATION OF STRUCTURES**
- **CHAPTERS 15 TO 19: RESERVED FOR FUTURE USE**
- **CHAPTER 20: QUALITY ASSURANCE**

FORMAT OF REVISED COTO STANDARD SPECIFICATIONS (VOLUME 2)

EACH CHAPTER SECTION CONSISTS OF:

PART A: SPECIFICATIONS

Table of Contents:

1. Scope
2. Definitions
3. General
4. Design by Contractor/Performance Based Systems
5. Materials
6. Construction Equipment
7. Execution of the Works
8. Workmanship

PART B: LABOUR ENHANCED

PART C: MEASUREMENT AND PAYMENT

PART D: GUARANTEES AND COMPLIANCE CERTIFICATES

CHAPTER 2: SERVICES

SECTION	DESCRIPTION	SCOPE
A 2.1	GENERAL REQUIREMENTS AND TRENCHING FOR SERVICES	<p>Section 2.1 covers the general requirements applicable to civil construction work associated with the location, identification, protection, relocation and the installation of services in road reserves as well as the protection and reinstatement of existing road infrastructure. This section also covers the trenching requirements applicable to the installation of services in road reserves.</p> <p>Chapter 2 does not cover storm water and other drainage structures.</p>
A 2.2	DRY SERVICES	<p>Section 2.2 covers the civil engineering components for the construction work associated with the installation of dry services (ducts and/or cables for telecommunications, electricity and street lighting) and ancillary works in road reserves and including the installation of services in road carriageways using micro and mini trenching.</p>
A 2.3	WET SERVICES	<p>This section of Chapter 2 covers the civil engineering components for the construction work associated with the installation of wet services (water supply and waste water (sewerage) pipelines) and ancillary works in road reserves. This section only covers medium pressure pipelines of diameter up to 1,0 m, for transporting water and sewerage under working pressures of up to 2,5 MPa.</p>
A 2.4	ENERGY AND OTHER SERVICES	<p>Section 2.4 covers the civil construction work associated with the installation of street lighting and electric power and other energy services (gas and fuel pipelines) and any other types of services not dealt with elsewhere in Chapter 2.</p> <p>Section 2.4 only covers excavation and backfilling work on electric power and street lighting services. The section does not cover the supports (poles, struts, stays, pylons, gantries etc) or the cables or other electric plant associated with such infrastructure.</p> <p>Work on certain energy (gas and fuel pipelines and higher voltage (HV, EHV and UHV) services, due to their nature, is specialised and therefore few standard specifications and conditions are considered to be applicable to such work. All such energy services shall therefore be installed in accordance with the project specifications. The purpose of Section 2.4 is therefore partly to provide a structured framework for the project specifications for civil construction work for such services.</p>

CHAPTER 4

EARTH AND LAYER WORKS: MATERIALS

4	EARTHWORKS AND LAYER WORKS: MATERIALS	
	DESCRIPTION	SCOPE
4.1	BORROW MATERIALS	Sourcing materials for earthworks and layer works from borrow pits and quarries for a specific road construction project or projects.
4.2	CUT MATERIALS	Sourcing materials that can be used for the construction of earthworks and layer works from: <ul style="list-style-type: none"> • New cuttings. • The widening of or altering the side slope of or cutting of benches into existing cuttings. • Box cuts for new roads and from box cuts for the widening of existing roads. • Designated excavations.
4.3	EXISTING ROAD MATERIALS	Sourcing of existing road construction materials that are: <ul style="list-style-type: none"> • Obtained from reclaiming or recycling existing road earthworks, layer works and asphalt materials (whether used as a pavement layer or used as the wearing course). • Used to reconstruct the same road they are obtained from or used on another road project.
4.4	COMMERCIAL MATERIALS	This section covers: <ul style="list-style-type: none"> • Sourcing materials for earthworks and layer works from commercial and other private sources. • The provision of commercial agents and additives that are added or worked into the available materials or layer to enhance, improve or alter its properties so that the materials then comply with the applicable quality and strength requirements.
4.5	ALTERNATIVE MATERIALS	Sourcing alternative materials for the construction of earthworks and layer works other than the sources under 4.1 to 4.4

CHAPTER 5

EARTH AND LAYER WORKS: CONSTRUCTION

5	EARTHWORKS AND LAYER WORKS: CONSTRUCTION	
	DESCRIPTION	SCOPE
5.1	ROADBED	<p>This section covers the following construction work:</p> <p>5.1.1.1 Clearing and grubbing</p> <p>5.1.1.2 Conservation of topsoil and vegetation</p> <p>5.1.1.3 Standard Roadbed treatment</p>
5.2	FILL	<p>This section covers:</p> <ul style="list-style-type: none"> • Hauling of material from the place of excavation (borrow, cut or existing road materials) or from the stockpile, to the position of placement. In the case of commercial and alternative materials, the cost of the procurement of these materials includes all the haulage. • Off-loading the fill material and subsequent processing of the fill material in layers. • The control of the moisture content and all work in connection with the construction of fills
5.3	ROAD PAVEMENT LAYERS	<p>This section covers the loading at the point of supply, the hauling and off-loading at the point of use, the spreading, mixing, watering and levelling and the compaction and finishing of all the various pavement layer materials required for the construction of the road pavement layer works</p> <p>This section also covers plant-mixed, paver-laid (PMPL) pavement layer construction</p>
5.4	STABILISATION	<p>This section covers the following construction work:</p> <p>5.4.1.1 Material stabilisation</p> <p>5.4.1.2 Material modification</p> <p>5.4.1.3 Use of recycler plant for material modification and/or stabilisation</p> <p>5.4.1.4 Proprietary stabilisation agents</p>
5.5	REHABILITATION AND RECYCLING OF LAYER WORKS	<p>This section covers the following work.</p> <p>5.5.1.1 Patching</p> <p>5.5.1.2 Milling</p> <p>5.5.1.3 In-place recycling</p>

CHAPTER 8

PRE-TREATMENT AND REPAIR OF EXISTING SURFACES

SECTION	DESCRIPTION
A 8.1	PRIME COATS
A 8.2	FOG SPRAYS, COVER SPRAYS AND REJUVENATION SPRAYS
A 8.3	TEXTURE TREATMENT
A 8.4	RUT AND/OR DEPRESSION CORRECTION
A 8.5	STANDARD CRACK SEALING
A 8.6	GEOTEXTILE CRACK SEALING
A 8.7	PLANING
A 8.8	PATCHING AND EDGEBREAK REPAIR
A 8.9	REPAIR OF SURFACE DEFECTS

CHAPTER 9

ASPHALT LAYERS

SECTION	DESCRIPTION
A 9.1	ASPHALT LAYERS (Base and surfacing)
	<p>A 9.1.1 Scope</p> <ul style="list-style-type: none">• Asphalt<ul style="list-style-type: none">- Continuously graded asphalt base (BC)- High modulus asphalt: Enrobé à Modulé Elevé (EME)- Continuously graded asphalt surfacing with or without rolled-in pre-coated chippings (AC)- Gap-graded asphalt surfacing with or without rolled-in pre-coated chippings (AG)- Semi-gap graded asphalt surfacing with or without rolled-in pre-coated chippings (AS)- Open-graded asphalt surfacing (AO)- Stone-mastic asphalt surfacing (SMA)- Ultra-thin friction courses (UTFC)• Hot mix asphalt (HMA)• Warm mix asphalt (WMA)• Cold mix asphalt (CA)• Recycled asphalt• Reclaimed asphalt (RA)• Certified asphalt mixes – UTFC• Bond coat• Prime coat

CHAPTER 10

SEALS AND MICRO-SURFACING

SECTION	DESCRIPTION
A 10.1	GENERAL REQUIREMENTS FOR SEALS
	A 10.1.1 Scope <ul style="list-style-type: none">• Binders<ul style="list-style-type: none">- Penetration grade bitumen- Bitumen emulsions- Cutback bitumen- Modified binders• Aggregate• Sprayed seals• Combination seals• Slurry• Micro-surfacing• Cover spray• Fog spray/rejuvenation spray

CHAPTER 12

GEOTECHNICAL APPLICATIONS

SECTION	DESCRIPTION
A 12.1	PILING
A 12.2	GROUND ANCHORS
A 12.3	GROUND IMPROVEMENT
A 12.4	LATERAL SUPPORT
A 12.5	SHOTCRETE
A 12.6	MECHANICALLY STABILISED EARTH WALLS
A 12.7	PIPE JACKING, DIRECTIONAL DRILLING, RAMBORING AND MICRO-TUNNELLING
A 12.8	GROUND DRAINAGE
A 12.9	SLOPE PROTECTION MEASURES
A 12.10	HARD EXCAVATION BY BLASTING
A 12.11	GEOSYNTHETICS
A 12.12	CONSTRUCTION DEWATERING

PROGRESS UPDATE PER CHAPTER _MARCH 2018

Chapter	Heading	Progress status			
		Part A	Part B	Part C	Part D
1	GENERAL	In progress	In progress	✓	x
2	SERVICES	WD	WD	✓	✓
3	DRAINAGE	WD	WD	✓	x
4	EARTH AND LAYER WORKS: MATERIALS	WD	WD	✓	x
5	EARTH AND LAYER WORKS: CONSTRUCTION	WD	WD	✓	✓
6	CONCRETE LAYERS	In progress	x	x	x
7	REPAIR & REHABILITATION OF CONCRETE LAYERS	In progress	x	x	x
8	PRE-TREATMENT AND REPAIR OF EXISTING SURFACES	WD	WD	✓	✓
9	ASPHALT LAYERS	WD	WD	✓	✓
10	SEALS AND MICRO-SURFACING	WD	WD	✓	✓
11	ANCILLARY ROAD WORKS	WD	WD	✓	x
12	GEOTECHNICAL APPLICATIONS	WD	WD	✓	✓
13	STRUCTURES	WD	WD	✓	✓
14	REPAIR AND REHABILITATION OF STRUCTURES	WD	WD	✓	✓
20	QUALITY ASSURANCE	WD	WD	✓	x

WD = Working Draft

CD = Committee Draft

COTO PROCEDURE

Step 1

- COTO Subcommittee identify needs for new or revision of existing Standard Specifications
- COTO Subcommittee forms workgroup
- Panel of Industry Experts appointed to assist workgroup (if required)

Step 2

- COTO Subcommittee Workgroup draft new Standard Specifications – number of Working Drafts (WD)
- Once workgroup is satisfied, Working Draft Final converted to Committee Draft (CD) and submitted to COTO Subcommittee for review and comment
- When approved by COTO Subcommittee, Committee Draft (CD) is submitted to Roads Coordinating Body for wider review and comment
- All comments received are reviewed and incorporated where applicable and Committee Draft Final (CDF) prepared

Step 3

- **Workshop CDF with industry**
- **All comments received are reviewed and incorporated where applicable and Committee Draft Final (CDF) prepared**
- COTO/RCB Workshop arranged to discuss Committee Draft Final (CDF)
- All written comments received, reviewed and incorporated where applicable into Committee Draft Final (CDF)

COTO PROCEDURE

PLANNED WD WORKSHOP WITH INDUSTRY

1)	Chapter 8 – Pre-treatment & Repair of Existing Surfaces Chapter 9 – Asphalt Layers Chapter 10 – Seals and Micro-surfacing Chapter 20 – Quality Assurance	2-day workshop (mid May)
2)	Chapter 4 – Earth and Layer Works: Materials Chapter 5 – Earth and Layer Works: Construction Chapter 20 – Quality Assurance	2-day workshop (beginning of July)
3)	Chapter 12 – Geotechnical Applications Chapter 13 – Structures Chapter 14 – Repair and Rehabilitation of Structures	2-day workshop (mid June)
4)	Chapter 2 - Services Chapter 3 – Drainage Chapter 11 – Ancillary Road Works	2-day workshop (end of July)
5)	Chapter 6 – Concrete Layers Chapter 7 – Repair & Rehabilitation of Concrete Layers Chapter 20 – Quality Assurance	2-day workshop (beginning of August)
6)	Total Volume 2	3-day workshop (end of August)

COTO PROCEDURE

Step 4

- Committee Draft Final (CDF) converted to Draft Standard (DS) and submitted by RCB to COTO for approval as Draft Standard Specifications
- Draft Standard (DS) Standard Specifications released to wider industry for implementation

Step 5

- Draft Standard (DS) Standard Specifications then introduced to Industry through workshops
- Draft Standard (DS) Standard Specifications utilised in industry for 2 year period, and comments/feedback provided to COTO subcommittee

Step 6

- At end of 2 year period all written comments received are collated and reviewed by COTO/RCB Subcommittee and incorporated where applicable
- Draft Standard (DS) converted to Final Standard (FS) and submitted by RCB to COTO for approval as Final Standard (FS) Standard Specifications.

COTO PROCEDURE

Step 7

- Final Standard (FS) Standard Specifications then released to industry
- Should changes between Draft Standard (DS) and Final Standard (FS) be extensive then further industry workshops might be arranged

Step 8

- Final Standard (FS) Standard Specifications used for maximum of 5 years in industry before revision considered

Dear All

As part of the process regarding the revision and rewrite of the existing **COLTO Standard Specifications for Road and Bridge Works for State Road Authorities (1998 edition)**, the COTO Road Materials Committee (RMC) will be hosting workshops to present Working Draft (WD) Chapters that have been revised. Due to the size of the document, individual workshops will be held for the different Chapters.

Attached you will find the following:

1. Invitation to the Workshop on **10 & 11 May 2018** to be held at the SANRAL offices in Bellville. For catering purposes we request that RSVPs are received by **Wednesday, 25 April 2018** – e-mail to duplessist@nra.co.za.
2. The format in which written comments are to be provided on the various Chapters being presented. Comments can be handed in at the workshop or e-mailed to **Krishna Naidoo** at naidookr@nra.co.za by no later than **Monday, 28 May 2018**.
3. Chapter 8: Pretreatment and repair of existing layers
4. Chapter 9: Asphalt layers
5. Chapter 10: Seals and microsurfacing
6. Chapter 20: Quality Assurance

Once all comments received have been discussed and incorporated where applicable the document (all Chapters) will be circulated for another round of review.



Standard Specifications for Road and Bridge Works

Working Draft (WD)

CHAPTER 8: PRETREATMENT AND REPAIR OF EXISTING LAYERS

May 2018

Confidential

**This document is confidential and may only
be distributed for purposes of obtaining
comment and not intended for use.**

TEMPLATE FOR INDUSTRY FEEDBACK

COTO CHAPTER	Comment Number (Name Abbreviation followed by number)	Your Name	Your Authority/Institution	Page	PART A, B, C or D, Section/Clause/ Subclause	Paragraph/Figure/Table/bullets (e. g. Table 1)	Type of comment: General Comment - GC Editorial Comment - EC Technical Comment - TC	Comments: Justification for change	Proposed change	Observations of the COTO Workgroup on each comment submitted
8 (example only)	DR1	Dennis Rossmann	Consultant	8-8	Part A, AB.2.7.1	second paragraph	EC	All references to 'Project Documentation'	Changed to 'Contract Documentation'	
8 (example only)	DR2	Dennis Rossmann	Consultant	8-9	Part B	All headings	GC	Applicable to all headings in Part B - Labour Enhanced section	All specifications under this heading in the various sections of PART A, shall apply.	
8										
8										

THANK YOU FOR YOUR ATTENTION!

