

COTO: ROAD MATERIALS COMMITTEE

RPF - July 2019 - Port Elizabeth Krishna Naidoo (Chair)

South Africa



Committee of Transport Officials

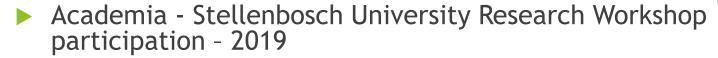
RMC Working Groups & Subcommittee



- RMC WGs Routine Road Maintenance, Water Demand
- COTO: RMC Materials testing Sub-committee report back later in RPF.
- RMC supports industry bodies like NLA, SABS, ECSA, SABITA, ASPASA, SAT etc directly and through our sub-committee.
- From time to time, we also invite industry bodies for specific agenda items.
- RMC was recently advised that civil engineering laboratories are forming their own industry body - RMC looking forward engaging further.

RMC + Industry

- Formed National WG: Chemistry for Roads
 - first project HPEWG report later in RPF



- ► CT scans,
- Pollution from tyres
- Automated vehicles
- Fire prevention in informal settlements
- Tech industry integration IoT/5G
 - awareness was created at previous RPF's
 - how do we engage further
- Geotech integration
 - presentation later in RPF.



NEW COTO DRAFT STANDARD SPECIFICATION WORKSHOP





Standard Specifications for Road and Bridge Works for State Road Authorities

Committee Draft (CD)
ALL CHAPTERS

Confidential

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

JC VAN DER WALT 2 July 2019

BACKGROUND: 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	

BACKGROUND:



- The revision work is carried out under the auspices of the Road Materials Committee (RMC).
- Working Groups for each of the Chapters were formalised in early 2014 which consists of a co-ordinator with the following members:
 - > RMC
 - Provinces
 - > SAFCEC
 - > ASPASA
 - Municipalities & Metros
 - Consultants (members specialising in specific fields)
 - > SANRAL
 - > DOT
 - The document to cater for the use of all authorities SANRAL, Provincial, Municipal and Metros.
 - The document to be available electronically and free of charge.
 - COTO Standard Specifications is not a "design document".

BACKGROUND:



- Revision procedure:
 - > Compile web-based document (replace 2 columns with 1)
 - Use SANRAL pro-forma as basis
 - > Review other documentation including international specifications
 - Change the layout and restructuring of the old document to be in line with international standards
 - Identify outdated requirements/equipment/specification
 - What works and what doesn't practical for contractor and measurable by engineer
 - Identify changes that affect other series (TRH; TMH, etc.)
 - Move away from terminology such as "determined by the Engineer".

WHAT HAS CHANGED FROM THE OLD TO THE NEW



- BASICALLY THE WHOLE DOCUMENT HAS CHANGED!!! (12 new chapters)
- Management and Utilisation (M&U) Plan: for borrow material, blasting, cuttings and fills ≥ 5000m³
- Material Grading Requirements: change in the sieve sizes
- Material Classification: Soft, intermediate and hard. No more intermediate, only for labour enhanced works
- Incorporate some SABS/SANS 1200 Specification principles into chapter sections
- The specification such as AASHTO, CEN, BS and other International standards requires agreement with our SABS for policing the standards locally

OLD CHAPTERS OF COLTO STANDARD SPECIFICATIONS (VOLUME 2 – 1998)



SERIES 1000: GENERAL

SERIES 2000: DRAINAGE

SERIES 3000: EARTHWORKS AND PAVEMENT LAYERS

OF GRAVEL OR CRUSHED STONE

SERIES 4000: ASPHALT PAVEMENTS AND SEALS

SERIES 5000: ANCILLIARY ROADWORKS

SERIES 6000: STRUCTURES

• SERIES 7000: SUNDRY STRUCTURES

• SERIES 8000: SUNDRIES

NEW FORMAT: CHAPTERS



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
- 1. to 8.
- ☐ PART C: MEASUREMENT AND PAYMENT
- PART D: GUARANTEES AND COMPLIANCE CERTIFICATES

NEW FORMAT:



PART B: LABOUR ENHANCED

Definition: Labour Enhanced means to improve the scope for labour

The methods and specifications related to labour enhanced construction are contained in **Part B** of each of the relevant sections of these Standard Specifications. The requirement for the use of labour enhanced construction methods to satisfy any particular **project goals** will be set out in the contract documentation.

The specifications given in **Part A** of these Standard Specifications will apply to all work carried by using labour enhanced construction methods unless some of the specifications in Part A are replaced with revised specifications in Part B that are specifically applicable to the specified labour enhanced construction or additional specification for labour enhanced construction are provided in **Part B**.

NEW CHAPTERS OF REVISED COTO STANDARD SPECIFICATIONS (VOLUME 2)



CHAPTER 1: GENERAL

CHAPTER 2: SERVICES

CHAPTER 3: DRAINAGE

CHAPTER 4: EARTH AND PAVEMENT LAYERS: MATERIALS

CHAPTER 5: EARTH AND PAVEMENT LAYERS: CONSTRUCTION

CHAPTER 6: CONCRETE LAYERS

CHAPTER 7: MAINTENANCE & REPAIR OF CONCRETE LAYERS

CHAPTER 8: PRE-TREATMENT AND REPAIR OF EXISTING SURFACES

CHAPTER 9: ASPHALT LAYERS

• CHAPTER 10: SEALS & 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

Document Versions

SANRAL
SOUTHAFRICAN NATIONAL ROADS AGENCY SOC LTD
Feg No. 1998/0000861/30
BUILDING SOUTH AFRICA
THROUGH BETTER ROADS

Working Draft (WD). When a COTO subcommittee identifies the need for the revision of existing Standard Specifications for Road and Bridge Works, a workgroup of experts is appointed by the COTO subcommittee to develop the document. This document is referred to as a Working Draft (WD). Successive working drafts may be generated, with the last being referred to as Working Draft Final (WDF). Working Drafts (WD) have no legal standing.

Committee Draft (CD). The Working Draft Final (WDF) document will be converted to a Committee Draft (CD) and is submitted to the COTO subcommittee (RMC) and industry for consensus and comments. Successive committee drafts may be generated during the process. When approved by the subcommittee, the document is submitted to the Roads Coordinating Body (RCB) members for further consensus building and comments. Additional committee drafts may be generated, with the last being referred to as Committee Draft Final (CDF). Committee Drafts (CD) have no legal standing.

Draft Standard (DS). The Committee Draft Final (CDF) document will be converted to a Draft Standard (DS) and submitted by the Roads Coordinating Body (RCB) to COTO for approval as a draft standard. This Draft Standard is implemented in Industry for a period of two (2) years, during which written comments may be submitted to the COTO subcommittee. **Draft Standards (DS)** have full legal standing.

Final Standard (FS). After the two-year period, comments received are reviewed and where appropriate, incorporated by the COTO subcommittee. The document is converted to a Final Standard (FS) and submitted by the Roads Coordinating Body (RCB) to COTO for approval as a final standard. This Final Standard is implemented in industry for a period of five (5) years, after which it may again be reviewed. Final Standards (FS) have full legal standing.

WORKSHOP PROGRAMME FOR THE DIFFERENT CHAPTERS

WORKSHOP: DURBAN



13 - 17 MAY 2019

	CHAPTER 8: PRE-TREATMENT AND REPAIR OF EXISTING SURFACES CHAPTER 9: ASPHALT LAYERS CHAPTER 10: SEALS CAHPTER 20: QUALITY ASSURANCE	10 & 11 MAY 2018 (CAPE TOWN)
	CHAPTER 4: EARTH AND LAYER WORKS: MATERIALS CHAPTER 5: EARTH AND LAYER WORKS: CONSTRUCTION CHAPTER 20: QUALITY ASSURANCE	27 JULY 2018 (PRETORIA)
	CHAPTER 2: SERVICES CHAPTER 3: DRAINAGE CHAPTER 11: ANCILLARY ROAD WORKS	19 & 20 SEPTEMBER 2018 (PORT ELIZABETH)
CHAPTER 12: GEOTECHNICAL APPLICATIONS CHAPTER 13: STRUCTURES CHAPTER 14: REPAIR & REHABILITATION OF STRUCTURES CHAPTER 20: QUALITY ASSURANCE		1 & 2 OCTOBER 2018 (CAPE TOWN)
	DRAFT COTO DOCUMENT WITH ALL CHAPTERS (CD) WORKSHOP: CAPE TOWN WORKSHOP: JOHANNESBURG **A NOTE OF THANKS TO SARF	25 – 29 MARCH 2019 8 – 12 APRIL 2019

FOR ARRANGING THE

WORKSHOPS**





Regional centre	No of attendees
Cape Town	97
Durban	133
Johannesburg	133































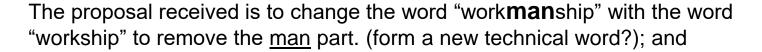






SOME INTERESTING COMMENTS RECEIVED

ALTERNATIVE WORDS FOR MANHOLES AND WORKMANSHIP



Change the word "**man**hole" with "inspection chamber" to remove the part of the word <u>man</u> from the document.

Opinions on the internet:

"1978 - In Woonsocket, Rhode Island, the City Council has ruled that from now on those metal-covered holes in our streets we've long called manholes will henceforth be known as person holes."

"They stopped calling them manholes, because it was sexist." – this decision was reversed a few months later and they went back to the term manholes and still use it today.

"Sacramento city officials, having found the word "manhole" sexist, have now come up with a new name for those utility holes in streets. Without fanfare, the City Council adopted the term "maintenance hole" this week to replace "manhole" on official maps and documents. Public works officials had proposed finding a non-sexist term in jest, but Mayor Anne Rudin liked the idea and the debate quickly spread."

WHAT IS THE OPINION OF RPF??





COTO REVISION

CHAPTERS: SANRAL website, www.nra.co.za
Service Provider zone; Manuals & policies; COTO
Standard Specifications

COTO REVISION COMMENTS: Excel spreadsheet for comments loaded with Chapters as above

E-mail for comments: cotorevision@nra.co.za

Deadline for comments was **Friday**, **28 June 2019**No additional comments will be considered after this date except for the MSEW section in Chapter 12.

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TRH/TMH UPDATES STRATEGIES

- ► RMC + INDUSTRY PARTNERSHIPS PILOT: TMH 5 REV
- ► COMPLETE INDUSTRY UPDATE Then proposal to RMC as TRH/TMH SABITA DOCUMENTS
- SANRAL RESEARCH PANEL SUPPORT
- ► RMC + CAPSA19 is engaging on a further model for documents to be updated.



REVISED COTO std spec - PROJECT SPECIFICATION

- COTO Companion document enquiries during workshops
- SANRAL PRO-FORMA compilation efforts commenced.
- ▶ 1 Municipality has enquired about being part of the effort.

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REVIEW OF TECHNICAL METHODS FOR HIGHWAYS (TMH) 5: SAMPLING METHODS FOR ROADS CONSTRUCTION MATERIAL RPF Feedback _July 2019_Port Elizabeth Gretchen-Webber Cherry

Participants of the TMH 5 Revision



- Commercial Laboratories CETLAB, LABCO, INDLELA LAB, SISWEKULA
- Consultants **ERO ENGINEERS, LEARNING MATTERS, VICTORRAS, AECOM**
- Asphalt Suppliers MORE ASPHALT, MUCH ASPHALT, NATIONAL ASPHALT
- Aggregate Suppliers AFRISAM, LAFARGE
- Provinces Representatives Western Cape Provincial Govt, KZN DOT
- Local Govt Reps eThekwini Municipality
- Contractors HILLARY CONSTRUCTION
- SANRAL
- SABITA
- SAT
- Concrete Institute
- ASPASA
- Academia Stellenbosch University

Full Listing of Participants



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The Revision includes

- The latest standards
- Best practice
- Innovation
- New technology
- New terminology
- Illustrations



Methods being updated

Natural Materials

- Sampling of a natural rock mass
- Sampling from a conveyor belt
- Sampling by auger

Stockpiled Material

- Untreated Materials
 - ✓ Sampling of stockpiles
 - ✓ Sampling from a conveyor belt
 - ✓ Sampling of cement of lime
 - √ Sampling of bituminous binders

Treated Materials

- ✓ Sampling of premixed asphalt
- ✓ Sampling of slurry mixes
- √ Sampling of freshly mixed concrete



Methods being updated cont.

- Pavement Layers
 - Sampling of road pavement layers
 - Sampling of asphalt and concrete from a completed layer or structure
- General Methods
 - Division of a sample using the riffler
 - Division of a sample by quartering





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- 6.1.2. A temperature is taken in the hole in the centre of the load, after the shovel has transferred the sample to the container
- 6.1.3. Place the samples in suitably marked sample containers (a heat-insulated container when briquettes are to be made) and dispatch if immediately to the laboratory.

THANK YOU FOR YOUR ATTENTION!





THANK YOU

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