



Technical Guideline 4

TG4 Second Edition - October 2020



excellence in bituminous products

Published by
Southern African Bitumen Association (Sabita)

Postnet Suite 56, Private Bag X21
Howard Place, 7450, South Africa
Tel: +27 21 531 2718

Email: info@sabita.co.za

ISBN 978-1-874968-77-1
Copyright © 2020 Sabita

DISCLAIMER

While considerable effort has been made to ensure the accuracy and reliability of the information contained in this publication, no warranty, assurance or representation is made in respect of fitness for purpose. Furthermore, neither Sabita nor any of its members can accept liability for any loss, damage or injury whatsoever resulting from the use of this information.

The user of this manual is deemed to have the necessary knowledge, skill and judgment to design bituminous surfacings and to exercise the necessary care and diligence in the application of this knowledge, skill and judgment. The information in this publication cannot supplant the user of the information's knowledge, skill and judgment based on the specific site and material conditions and state of the art and the user's exercise of the necessary care and diligence in the application of this knowledge, skill and judgment. Hence neither Sabita nor any of its members can accept liability for any loss, damage or injury whatsoever from the application, or failure to apply such knowledge, skill and professional judgment with the necessary care and diligence by the user of the information in this publication.

The above exclusions apply irrespective of any references in any COTO document to any of Sabita's manuals.

Copyright notice: *This document and the contents of these pages are the Southern African Bitumen Association (Sabita). This document is made available to Members of Sabita as a service and is intended for the sole use of such Members, who may reproduce this document in whole or in part for the purpose of implementation of the systems described herein. All other rights are reserved. Any other use requires the prior written permission of Sabita.*

MANUALS PUBLISHED BY SABITA

Manual 1	Technical guidelines: Construction of bitumen rubber seals
Manual 2	Bituminous binders for road construction and maintenance (under review)
Manual 3	(Withdrawn)
Manual 4	(Withdrawn)
Manual 5	Guidelines for the manufacture and construction of asphalt
Manual 6	(Withdrawn)
Manual 7	SurperSurf – Economic warrants for surfacing roads
Manual 8	Guidelines for the safe and responsible handling of bituminous products
Manual 9	(Withdrawn)
Manual 10	Bituminous surfacing for low volume roads and temporary deviations
Manual 11	(Withdrawn)
Manual 12	Labour Absorptive methods in road construction using bituminous materials
Manual 13	LAMBs – The design and use of large aggregate mixes for bases
Manual 14	(Superseded by TG2)
Manual 15	(Withdrawn)
Manual 16	(Withdrawn)
Manual 17	Porous asphalt mixes: Design and use
Manual 18	Appropriate standards for the use of sand asphalt
Manual 19	Guidelines for the design, manufacture and construction of bitumen rubber asphalt wearing courses
Manual 20	Sealing of active cracks in road pavements
Manual 21	(Superseded by TG2)
Manual 22	Hot mix paving in adverse weather
Manual 23	Code of practice: Loading bitumen at refineries
Manual 24	User guide for the design of asphalt mixes (currently being developed)
Manual 25	Code of practice: Transportation, off-loading and storage of bitumen and bituminous products
Manual 26	Interim guidelines for primes and stone pre-coating fluids
Manual 27	Guidelines for thin hot mix asphalt wearing courses on residential streets
Manual 28	Best practice for the design and construction of slurry seals
Manual 29	Guide to the safe use of solvents in a bituminous products laboratory
Manual 30	A guide to the selection of bituminous binders for road construction
Manual 31	Guidelines for calibrating a binder distributor to ensure satisfactory performance
Manual 32	Best practice guideline and specification for warm mix asphalt
Manual 33	Design procedure for high modulus asphalt (EME)
Manual 34	(A) Guidelines to the transportation of bitumen and (B) Bitumen spill protocol (booklets)
Manual 35 / TRH8	Design and use of Asphalt in Road Pavements
Manual 36 / TRH21	Use of Reclaimed Asphalt in the Production of Asphalt
Manual 37	Sampling Methods for road construction materials (currently being developed)
Manual 38	A Health and Safety Guide for material testing laboratories in the road construction industry
Manual 39	Laboratory testing protocols for binders and asphalt
Manual 40	Design and construction of surfacing seals

TECHNICAL GUIDELINES

TG 1	The use of modified binders in road construction
TG 2	Bitumen stabilised materials
TG 3	Asphalt reinforcement for road condition

SABITA DVD SERIES

DVD 100	Test methods for bituminous products
DVD 200	Training guide for the construction and repair of bituminous surfacing by hand
DVD 300	Manufacture, paving and compaction of hot mix asphalt
DVD 410	The safe handling of bitumen
DVD 420	Treatment of bitumen burns
DVD 430	Working safely with bitumen
DVD 440	Firefighting in the bituminous products industry
DVD 450	Safe loading and off-loading of bitumen

ACKNOWLEDGEMENT

Mr Dave Wright (private consultant) is acknowledged for his time and contribution in compiling the water classification and quality requirements.

WATER QUALITY for USE in Civil Engineering Testing Laboratories

Water, for use in civil engineering laboratory testing, with clear (non-turbid), uncoloured appearance and without odour, complying with the requirement of table 1.

Table 1: Water Classification and Quality Requirements

1	2	3	4	5
Class	Description of typical use	Maximum electrical conductivity at 25°C	Maximum total dissolved salts	pH range at 25°C
0	Reagent quality for analytical chemical testing	0.5 mS/m	2 mg/L	5.0 to 7.5
I	Tests requiring high water quality	150 mS/m	1 000 mg/L	5.0 to 9.5
II	General testing requirements	370 mS/m	2 400 mg/L	4.0 to 10.0
-	For general use where no class has been specified	-	-	-

Note 1: Distilled or demineralized water is likely to be suitable for class 0. In South Africa, tap water from major municipalities is likely to be suitable for class 1 while water sources used for drinking will probably comply with class II.

Note 2: In South Africa, municipal water sources are by law required to be tested regularly and the results communicated to consumers. The results so provided would be acceptable as proof of quality. New sources without such testing would require chemical analysis to determine compliance.