

Road Maintenance Forum – October 2022

Sabita's Training Material



excellence in bituminous products

Format of Presentation

- Who is Sabita and what does it do?
- Sabita Manual 12
 - Purpose of manual
 - Typical content
 - M04 – Edge break repairs
- Sabita DVD 200 Series of videos
 - Edge break Repairs
- Availability of material

Who is Sabita?

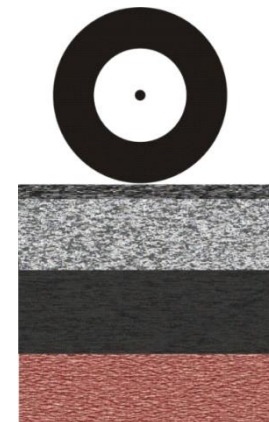
- Nonprofit organisation
- Started in 1979 – 43 years in existence
- Members comprise:
 - Bitumen producers and marketers
 - Manufacturers and applicators of bituminous products
 - Consulting engineers
 - Industry associated organisations



What does Sabita do?

Promote excellence in the use of bitumen materials through:

1. Publishing R & D of best practice / **technology**
2. **Engaging stakeholders** to promote efficient provision of roads
3. Promoting **sustainable practices** for construction and maintenance of roads
4. Promoting best practices in **health and safety** to ensure worker health and safety
5. Promoting of **Sustainable Human Resources**
6. Bitumen Industry **Representation & Information Dissemination**



What does Sabita do?

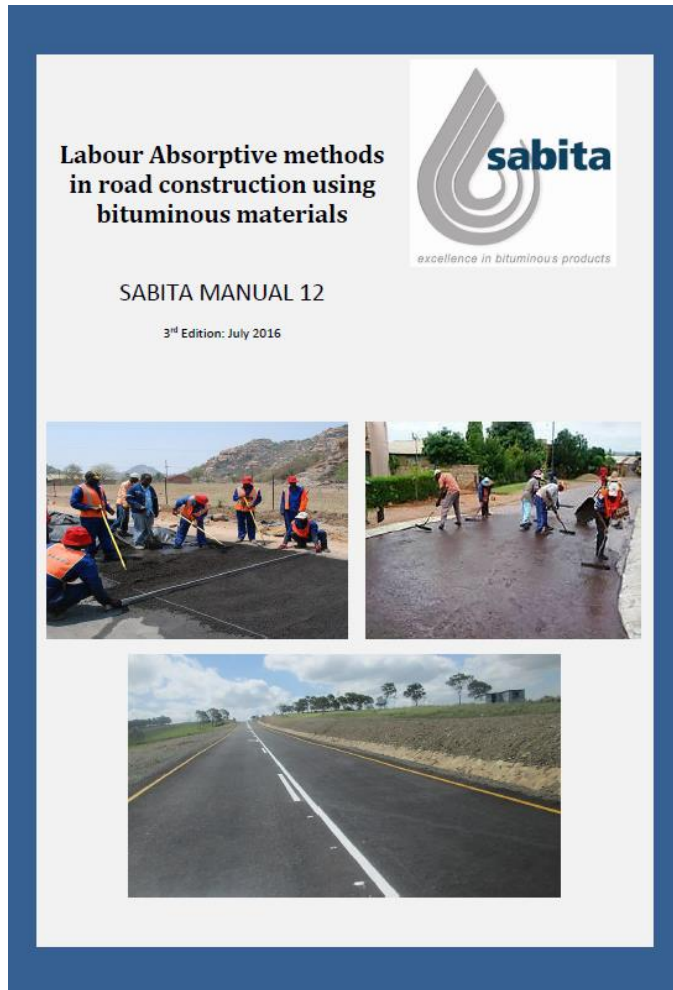
Technology Development

- For the industry to remain relevant and sustainable the design, production and application of bituminous materials must be done to the highest standard of quality.
 - **Develop/Update best practice guidelines**
 - Initiate SABS standards review / update
 - Conduct research into various bitumen applications
 - Conduct trials to improve bituminous materials performance
 - Revise test methods for bituminous materials



Sabita Manual 12

- Manual 12 released in 2016
- Third Ed. Revised March 2017
- Emphasis on Labour Absorptive methods
 - S'hamba Sonke Programme (SSP)
 - *Job Creation, Skills Development and Empowerment in Road Construction, Rehabilitation and Maintenance*, published by the Gauteng Department of Public Transport, Roads and Works in 2008.



Presentation will focus on maintenance aspects only

Sabita Manual 12 - Contents

CONTENTS

Preface	5
Introduction	5
Suitability for labour enhancement	7
HSSE Considerations	10
Road Work Zone Safety	10
Task specific Health and Safety requirements	10
Pre-start-up Safety Measures	10
Methods	11
Preparation of Base.....	13
P 01: Preparing a base course surface	13
P 02: Protecting kerbs and other roadside furniture	14
P 03: Watering of base course	15
General Operations.....	16
G 01: Spray application of a bituminous binder by Hand	16
G 02: Application of stone chips	20
G 03: Mixing Slurry.....	23
G 04A: Application of slurry as a seal coat.....	25
G 04B: Application of slurry as a filler	27

Sabita Manual 12 - Contents

Construction of Bituminous Surfacing.....	29
S 01: Construction of a single seal	29
S 02: Construction of a Double seal	30
S 03: Construction of a Cape seal.....	32
S 04: Construction of a Graded Crushed Stone seal	33
S 05: Construction of an Asphalt Surfacing.....	34
S 06: Construction of a cold mix Asphalt surfacing.....	37
S 07: Slurry bound macadam	40

Sabita Manual 12 – Maintenance Contents

Maintenance operations.....	43
M 01: Pothole repair with asphalt	43
M 02: Pothole repair with a fabricated road patch	46
M 03: Base and surfacing repairs.....	49
M 04: Edge break repair.....	52
M 05: Crack sealing (less than 5 mm width)	56
M 06: Crack sealing (more than 5 mm width)	58
M 07: Crack sealing with a geotextile fabric	60
M 08: Crack sealing using a fabricated road patch	63
M 09: Trench reinstatement	66

Sabita Manual 12 - M 04 Edge Break Repair

Description

Repair of damage caused to the edge of the black top surfacing normally due to the lack of lateral support afforded to the base and surfacing by an eroded gravel shoulder.

Edge breaks have the effect of reducing the road width and forming deep furrows at the edge, both of which constitute serious hazards to vehicles.

The method described here will cover the **repair of deep edge breaks with bitumen stabilised material and asphalt surfacing.**



Municipal News

Welgedacht Road maintenance causes havoc

Recent road repairs on Welgedacht Road (R555) at the T-junction with Stoffberg Road towards Persida, have allegedly caused three near fatal accidents.

April 11, 2017

Anna Robertson 2 minutes read



excellence in bituminous products

Sabita Manual 12 – L/P/M Requirements

Requirements

LABOUR		PLANT / EQUIPMENT		MATERIAL	
No.	Class	No.	Type	No.	Description
1	Supervisor/Truck driver	1	Truck with amber flashing light	As req.	Aggregates with a composition as specified (See "Materials" below)
12	General workers	1	Pedestrian roller or plate compactor	As req.	Fresh ordinary Portland cement
3	General workers (Mixing team)	1	Hand stamper	As req.	60% Cationic premix grade emulsion
2	Traffic controllers	4	Wheel barrows		60% anionic stable mix emulsion (tack coat)
		4	Picks		Sealant (bitumen emulsion)
		8	Shovels	As req.	Solvent / water
		1	Block brush	As req.	Asphalt (either hot or cold bagged)
		2 or more	Shutter boards	As req.	Shoulder material
		1	Small concrete mixer 175 litres		
		1	Rake with metal straight edge		
		2	Brooms (bass)		
		1	Watering can with rose head		
		1	2 m straight edge		
		1	Tape measure		
		10	Steel pegs		
		1	Mallet – 2kg.		
		1 box	Crayons		
		1 roll	String line		
		2	Red flags		
		2	Safety vests		
		As req.	Road signs as per the SARTSM		



Sabita Manual 12 – Activities/Key Points

Method and procedures

ACTIVITY		STEP	KEY POINTS
1	Secure work area	1A	The work area should be barricaded off in the correct manner to allow for the work to be undertaken while protecting persons in the work zone and allowing safe passage of vehicles, especially where the work is undertaken under traffic.
		1B	Traffic signs should be set out in accordance with national standards.
2	Site preparation	2A	The damage zone to be removed should be marked out clearly along the edge of the road, measuring from the centre line to achieve a neat joint parallel to the road edge. A straight edge and/or string line and crayons should be used for this purpose, ensuring that the area marked out covers the full extent of the damaged road edge.
3	Excavation and removal of damaged material	3A	The damaged surfacing as well as the surfacing up to the edge of the crayon markings is chipped out using a pick, leaving vertical faces. Excavation should extend to a solid, sound substrate to a minimum depth of 25 mm.
		3B	Pick a 25 mm deep groove on the correct edge line to serve as a “thickened edge” of the bitumen stabilised material.
		3C	The loose material is removed to a depth of a maximum of 150 mm. All loose material and dust is removed by brooming to ensure a good bond between new and existing materials.

Sabita Manual 12 - Materials

Materials

Bitumen stabilised material consists of a combination of aggregates and 60% cationic premix grade emulsion, mixed 1 part to 8 parts by volume of the aggregate combination.

Generally, 1 part of 14 mm size, 2 parts of 7.1 mm size and 1 part of crusher dust may well meet **grading requirement**.

Where prevailing conditions may retard the setting of the bitumen stabilised material to an unacceptable level, **consideration should be given to the use of quick setting emulsions supplied by a reputable firm.**



Sabita Manual 12 – Quality Standards

Quality standard

The **road edge is reinstated** to its original position and neither widened nor narrowed.

The **surface of the repaired area should be a continuation** of the existing road cross fall.

Sufficient side support should be provided along the edge of the wearing course layer.

The gravel shoulder should be **shaped so as to allow water to drain away from the road surface.**



Sabita DVD Series - DVD200



DVD200

Training Guide for the construction
and repairs of bituminous
surfacings by hand

- Crack sealing
- Edge break repairs
- Patching
 - Walk behind roller
 - Slurry
 - Road patch
- Pothole repair
 - Cold-mix asphalt
 - Hot mix asphalt
- Traffic accommodation

Sabita DVD Series - DVD200

["C:\Users\User\Documents\RoadMaintenanceForum\PresentationForum2\Sabita Edgebreak Repairs ver 2-Large 540p.mov"](#)

Availability of Sabita Training Material

- Manual 12 available on Sabita site at www.sabita.co.za
- Sabita willing to make video training material available at reduced cost prices (member prices) to all service providers certified to conduct the following Unit Standards

Availability of Sabita Training Material

Use labour intensive construction methods to construct and maintain roads and stormwater damage

SAQA US ID	NQF LEVEL	CREDITS	LAST DATE - ENROLLMENT	LAST DATE - ACHIEVEMENT
114916	02	8	2024-06-30	2027-06-30

QUALIFICATIONS UTILISING THIS UNIT STANDARD:

	ID	QUALIFICATION TITLE	PRE-2009 NQF LEVEL	NQF LEVEL	STATUS	END DATE
Elective	49411	General Education and Training Certificate: Construction	Level 1	NQF Level 01	Reregistered	2023-06-30
Elective	49410	National Certificate: Construction	Level 2	NQF Level 02	Reregistered	2023-06-30

Both qualifications – CETA primary/delegated QA

Availability of Sabita Training Material

Maintain and repair bituminous road surfaces

SAQA US ID	NQF LEVEL	CREDITS	LAST DATE - ENROLLMENT	LAST DATE - ACHIEVEMENT
13958	02	8	2024-06-30	2027-06-30

QUALIFICATIONS UTILISING THIS UNIT STANDARD:

	ID	QUALIFICATION TITLE	PRE-2009 NQF LEVEL	NQF LEVEL	STATUS	END DATE
Elective	49411	General Education and Training Certificate: Construction	Level 1	NQF Level 01	Reregistered	2023-06-30
Elective	24133	National Certificate: Construction: Roadworks	Level 2	NQF Level 02	Reregistered	2023-06-30
Elective	24173	National Certificate: Construction: Roadworks	Level 3	NQF Level 03	Reregistered	2023-06-30

All three qualifications – CETA primary/delegated QA

Availability of Sabita Training Material

Maintain and repair unsurfaced road shoulders

SAQA US ID	NQF LEVEL	CREDITS	LAST DATE - ENROLLMENT	LAST DATE - ACHIEVEMENT
119715	02	6	2024-06-30	2027-06-30

QUALIFICATIONS UTILISING THIS UNIT STANDARD:

	ID	QUALIFICATION TITLE	PRE-2009 NQF LEVEL	NQF LEVEL	STATUS	END DATE
Elective	49411	General Education and Training Certificate: Construction	Level 1	NQF Level 01	Reregistered	2023-06-30
Elective	24133	National Certificate: Construction: Roadworks	Level 2	NQF Level 02	Reregistered	2023-06-30

Both qualifications – CETA primary/delegated QA

Sabita DVD Series - DVD200

Organize and control general road maintenance activities

SAQA US ID	NQF LEVEL	CREDITS	LAST DATE - ENROLLMENT	LAST DATE - ACHIEVEMENT
15187	04	20	2024-06-30	2027-06-30

QUALIFICATIONS UTILISING THIS UNIT STANDARD:

	ID	QUALIFICATION TITLE	PRE-2009 NQF LEVEL	NQF LEVEL	STATUS	END DATE
Elective	65949	Further Education and Training Certificate: Supervision of Construction Processes	Level 4	NQF Level 04	Reregistered	2023-06-30

Qualification – CETA primary/delegated QA

Availability of Sabita Training Material

- Manual 12 available on Sabita site at www.sabita.co.za
- Sabita willing to make video training material available at reduced cost prices (member prices) to all service providers certified to conduct the following Unit Standards
- Contact Lorraine Wagner
 - Lewagner@sabita.co.za
- No charge except for cost of printing/memory stick and postage
- Require commitment that service providers to provide no of trainees passing US per annum – no personal detail required of trainees

Becoming a Sabita Member?

Associate Members

A company, close corporation, partnership, trading trust or other organisations actively interested in the promotion of excellence in the use of Bituminous Products in southern Africa, shall be entitled to become an Associate Member if in the opinion of the Council it is otherwise qualified.

Public sector organisations providing services related to the use of Bituminous Products shall qualify for associate membership.

Hazel Brown - Hazel@sabita.co.za

Becoming a Sabita Member?

Join forces with other members in the road industry to form part of an organisation that has been pre-eminent in technology development and advancing the case for road provision and preservation.

Free attendance to the Roads Pavement Forum (RPF) twice a year.

Discounted registration fees on all Sabita, Asphalt Academy and SARF courses of a minimum of 25% per delegate per event.

BitSafe training course in the safe handling of bitumen. Suitable employees are recruited from member companies to undergo training as BitSafe trainers.

Introductory package containing a full set of educational material, technical manuals and audio-visual items.

<https://www.sabita.co.za/wpcontent/uploads/2021/11/membershipbenefitdocument2021.pdf>

