

ISBN 978-0-626-31245-9

**SANS 241-2:2015**

Edition 2

# **SOUTH AFRICAN NATIONAL STANDARD**

## **Drinking water**

### **Part 2: Application of SANS 241-1**

**WARNING**

**This document references other documents normatively.**

---

Published by SABS Standards Division  
1 Dr Lategan Road Groenkloof ☒ Private Bag X191 Pretoria 0001  
Tel: +27 12 428 7911 Fax: +27 12 344 1568

[www.sabs.co.za](http://www.sabs.co.za)

© SABS

**SABS**

---

**SANS 241-2:2015**  
Edition 2

**Table of changes**

<b>Change No.</b>	<b>Date</b>	<b>Scope</b>

**Foreword**

This South African standard was approved by National Committee SABS/TC 147, *Water*, in accordance with procedures of the SABS Standards Division, in compliance with annex 3 of the WTO/TBT agreement.

This document was approved for publication in March 2015.

This document supersedes SANS 241:2011 (edition 1).

**This document is referenced in the Water Services Act, 1997 (Act No. 108 of 1997), Regulations relating to the compulsory national standards and measures to conserve water, as published by Government Notice No. 509 (Government Gazette No. 22355) of 8 June 2001, the Foodstuffs, Cosmetics and Disinfectants Act, 1972 (Act No. 54 of 1972), the National Health Act, 2003 (Act No. 61 of 2003), the Constitution of RSA, 1996 (Act No. 108 of 1996), and the Local Government: Municipal Systems Act, 2000 (Act No. 32 of 2000).**

Reference is made in clause 8 to the "relevant national body". In South Africa this means the South African Water Research Commission.

SANS 241 consists of the following parts, under the general title *Drinking water*:

*Part 1: Microbiological, physical, aesthetic and chemical determinands.*

*Part 2: Application of SANS 241-1.*

Annexes A, B and C are for information only.

## Contents

	Page
Foreword	
<b>1</b> Scope .....	3
<b>2</b> Normative references .....	4
<b>3</b> Definitions .....	4
<b>4</b> Water quality risk assessment .....	6
<b>4.1</b> General .....	6
<b>4.2</b> Requirements for water quality risk assessments .....	6
<b>4.3</b> Interpretation of water quality risk assessments .....	8
<b>5</b> Routine water quality monitoring programmes.....	9
<b>5.1</b> General .....	9
<b>5.2</b> Sampling points .....	9
<b>5.3</b> Determinands and frequency of analyses .....	9
<b>6</b> Response monitoring .....	12
<b>6.1</b> Incident management of drinking water quality failures .....	12
<b>6.2</b> Microbiological determinands .....	12
<b>6.3</b> Chemical, physical, aesthetic and operational determinands .....	12
<b>7</b> Verification of water quality .....	12
<b>7.1</b> General .....	12
<b>7.2</b> Calculation of risk defined compliance .....	13
<b>7.3</b> Calculation of drinking water quality compliance .....	13
<b>7.4</b> Performance categorization of distribution systems.....	14
<b>8</b> Requirements for water safety plans.....	14
<b>Annex A</b> (informative) Example of risk and compliance calculations for a large municipality serving more than 100 000 people .....	16
<b>Annex B</b> (informative) Example of risk and compliance calculations for a small municipality serving fewer than 100 000 people.....	30
<b>Annex C</b> (informative) Calculation of combined trihalomethane and combined nitrate plus nitrite concentrations.....	43
<b>Bibliography</b> .....	44

**SANS 241-2:2015**  
Edition 2

**This page is intentionally left blank**

## Drinking water

### Part 2:

### Application of SANS 241-1

## 1 Scope

**1.1** This part of SANS 241 deals with the evaluation of water quality risks, monitoring and verification of water quality to enable the management of the identified water quality risks. It is not intended to provide a comprehensive water management plan, which is required for the implementation of a water safety plan that deals with related issues such as water quantity, finance and maintenance.

**1.2** This part of SANS 241 is applicable to all water services institutions or water services intermediaries (or both). Assessment of the fitness for use of drinking water against the determinands and numerical limits specified in SANS 241-1 provides the minimum assurance necessary that the water is deemed to present an acceptable health risk for lifetime consumption.

**1.3** It provides the key elements for implementing management actions to comply with SANS 241-1, which include the following:

- a) **water quality risk assessment** – assessment of risk from raw water through the treatment works to the point of delivery;
- b) **water quality monitoring** – establishment and implementation of operational and compliance water quality monitoring programmes, including the location of sampling points, sampling frequency and determinands;
- c) **response monitoring** – incident management and monitoring of drinking water quality when the numerical limits specified in SANS 241-1 are exceeded;
- d) **verification of water quality** – calculation of compliance with the numerical limits in SANS 241-1; and
- e) **a water safety plan** – a comprehensive water quality management system based on the principles of preventive risk management and incorporating the outcomes in (a) to (d) above.

**1.4** The provision of water deemed to have an acceptable health risk as defined by SANS 241-1 remains the ultimate responsibility of the water services institution or water services intermediary (or both). Water services institutions or water services intermediaries (or both) shall use a risk-based management approach to ensure that safe drinking water is produced at all times and that public health is protected.