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Edition 6.1

SOUTH AFRICAN NATIONAL STANDARD

The classification of hazardous locations and the selection of equipment for use in such locations

WARNING

**This document references other
documents normatively.**

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Table of changes

Change No.	Date	Scope
Amdt 1	2017	Amended to update the foreword and a referenced standard.

Foreword

This South African standard was approved by National Committee SABS/TC 065, *Explosion prevention*, 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 February 2017.

This document supersedes SANS 10108:2014 (edition 6).

A vertical line in the margin shows where the text has been technically modified by amendment No. 1.

Reference is made in 3.2 to a "government-endorsed accreditation body". In South Africa, this means the South African National Accreditation System (SANAS).

Reference is made in 3.5 to the "relevant national authority". In South Africa, this means the applicable of the following:

- a) in terms of the Mine Health and Safety Act, 1996 (Act No. 29 of 1996): Chief Inspector of Mines of the Department of Mineral Resources (Regulator); or
- b) in terms of the Occupational Health and Safety Act, 1993 (Act No. 85 of 1993): Chief Inspector of Occupational Health and Safety of the Department of Labour (Regulator); or
- c) in terms of the Explosives Act, 2003 (Act No. 15 of 2003): Chief Inspector of Explosives of the South African Police Services (Regulator).

Reference is made in 4.1.1, 4.1.2, 4.4.1.1, 4.4.2.1, 4.4.3 and 6.4 to the "relevant national legislation". In South Africa this means the Mine Health and Safety Act, 1996 (Act No. 29 of 1996).

Reference is made in 6.4 to the "relevant national department". In South Africa, this means the Department of Labour.

This document is referenced in the Labour Relations Act, 1995 (Act No. 66 of 1995), the Machinery and Occupational Safety Act, 1983 (Act No. 6 of 1983), the Mine Health and Safety Act, 1996 (Act No. 29 of 1996), the National Health Act, 2003 (Act No. 61 of 2003), and the Occupational Health and Safety Act, 1993 (Act No. 85 of 1993). Amdt 1

Annexes A, B, C, D and E are for information only.

Compliance with this document cannot confer immunity from legal obligations.

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The classification of hazardous locations and the selection of equipment for use in such locations

1 Scope

1.1 This standard covers the classification of surface and underground locations in which fires or explosions can occur owing to the presence of flammable gases, vapours or mists, dusts, fibres or flyings in the air, in order to permit the proper selection of electrical equipment and mechanical equipment, such as compression-ignition engines (diesel engines), to be used in such locations. The classification is based on the type of substance liable to cause a fire or an explosion, and on the frequency or probability of the occurrence of explosive conditions.

1.2 This standard does not cover locations that are rendered hazardous by the presence of substances that are flammable or explosive in the absence of atmospheric oxygen.

1.3 This standard does not cover major releases caused by catastrophic plant failures such as the rupture of tanks, pressure vessels or pipes.

NOTE 1 For recommendations on installation, maintenance and repair see SANS 10086-1, SANS 10086-2 and SANS 10086-3.

NOTE 2 In this standard, no distinction is made between the terms "flammable", "combustible", "ignitable" and "explosive", although "flammable" is commonly used. Given the right conditions, most flammable substances will give rise to an explosion.

2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies. Information on currently valid national and international standards can be obtained from the SABS Standards Division.

API 505, *Recommended practice for classification of locations for electrical installations at petroleum facilities classified as class I, zone 0, zone 1, and zone 2.*

~~ARP 0108, *Regulatory requirements for explosion-protected apparatus.*~~

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IP 15, *Petroleum products – Determination of pour point.*

SANS 1020, *Power-operated dispensing devices for flammable liquid fuels.*

SANS 10086-1, *The installation, inspection and maintenance of equipment used in explosive atmospheres – Part 1: Installations including surface installations on mines.*