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Edition 1

SOUTH AFRICAN NATIONAL STANDARD

**The design of detonator initiation systems for
use in mining and civil blasting applications**

Part 1: Electronic initiation systems

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1 dr lategan road groenkloof ☒ private bag x191 pretoria 0001
tel: 012 428 7911 fax: 012 344 1568 international code + 27 12
www.stansa.co.za
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Table of changes

Change No.	Date	Scope

Abstract

Covers the performance requirements and testing of electronic delay detonator (EDD) initiation systems and other related systems, used in the electronic initiation of explosive blasts.

Keywords

blasting, detonators, electrical equipment, electronic delay detonators (EDDs), explosives, explosives technology, mining, underground mining.

Foreword

This South African standard was approved by National Committee StanSA TC 65, *Explosion prevention*, in accordance with procedures of Standards South Africa, in compliance with annex 3 of the WTO/TBT agreement.

A reference is made in **3.3** to "approving authority". In South Africa, the approving authority is

- a) in accordance with the Mine Health and Safety Act, 1996 (Act No. 29 of 1996), the Chief Inspector of Mines of the Department of Minerals and Energy, or
- b) in accordance with the Occupational Health and Safety Act, 1993 (Act No. 85 of 1993), the Chief Inspector of Occupational Health and Safety of the Department of Labour, or
- c) in accordance with the Explosives Act, 2003 (Act No. 15 of 2003), the Chief Inspector of Explosives of the Department of Labour.

These authorities require that any testing or certification in terms of this part of SANS 1717 be done by an approved test laboratory (ATL).

In **3.3**, **4.3.2**, **4.4.2**, **5.2.1** and **A.1.2(c)**, reference is made to "relevant legislation", and in **4.2.3(n)**, reference is made to "legislative requirements". In South Africa, this is the Explosives Act, 2003 (Act No. 15 of 2003), the Mine Health and Safety Act, 1996 (Act No. 29 of 1996) and the Occupational Health and Safety Act, 1993 (Act No. 85 of 1993).

In **3.11**, reference is made to "legislation" and in **A.2.2** and **A.4** (twice), reference is made to "relevant legislation". In South Africa, this is the Mine Health and Safety Act, 1996 (Act No. 29 of 1996) and the Occupational Health and Safety Act, 1993 (Act No. 85 of 1993).

In **3.1** and **4.2.3**, reference is made to the "relevant statutory requirements". In South Africa this is the Explosives Act, 2003 (Act No. 15 of 2003), the Mine Health and Safety Act, 1996 (Act No. 29 of 1996) and the Occupational Health and Safety Act, 1993 (Act No. 85 of 1993).

SANS 1717 consists of the following parts, under the general title *The design of detonator initiation systems for use in mining and civil blasting applications*:

Part 1: Electronic initiation systems.

Part 2: Electric initiation systems – Shot exploder based.

Annex B forms an integral part of this part of SANS 1717. Annex A is for information only.

Foreword (*continues*)

Introduction

The layout of this part of SANS 1717 differs from usual. The requirements are included with the test methods to align with similar international standards.

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The design of detonator initiation systems for use in mining and civil blasting applications

Part 1: Electronic initiation systems

1 Scope

This part of SANS 1717 covers the performance requirements and testing of electronic delay detonator (EDD) initiation systems and other related systems, used in the electronic initiation of explosive blasts.

2 Normative references

The following normative documents contain provisions which, through reference in this text, constitute provisions of this part of SANS 1717. All normative documents are subject to revision and, since any reference to a normative document is deemed to be a reference to the latest edition of that document, parties to agreements based on this part of SANS 1717 are encouraged to take steps to ensure the use of the most recent editions of the normative documents indicated below. Information on currently valid national and international standards can be obtained from Standards South Africa.

2.1 Standards

EN 13763-1, *Explosives for civil uses – Detonators and relays – Part 1: Requirements.*

EN 13763-16, *Explosives for civil uses – Detonators and relays – Part 16: Determination of delay accuracy.*

EN 13763-17, *Explosives for civil uses – Detonators and relays – Part 17: Determination of no-fire current of electric detonators.*

EN 13763-22, *Explosives for civil uses – Detonators and relays – Part 22: Determination of capacitance, insulation resistance and insulation breakdown of leading wires.*

EN 50020, *Electrical apparatus for potentially explosive atmospheres – Intrinsic safety "i".*

IEC 60068-2-14, *Environmental testing – Part 2-14: Tests – Test N: Change of temperature.*

IEC 60068-2-32, *Basic environmental testing procedures – Part 2: Tests – Test Ed: Free fall.*

ISO 4957, *Tool steels.*

SANS 357-17, *Heat-treated steels, alloy steels and free-cutting steels – Part 17: Ball and roller bearing steels.*