

Australian Standard™

**Explosives—Storage, transport
and use**

**Part 4: Pyrotechnics—
Outdoor displays**

This Australian Standard was prepared by Committee CE/5, Explosives. It was approved on behalf of the Council of Standards Australia on 30 December 1997 and published on 5 July 1998.

The following interests are represented on Committee CE/5:

Australian Institute of Explosives Engineers
Australian Institute of Mining and Metallurgy
Australian Chamber of Commerce and Industry
AUSTROADS
Chamber of Mines of Western Australia
Crushed Stone Association of Australia
Department of Defence
Department for Industrial Affairs, S.A.
Department of Mineral Resources, N.S.W.
Department of Minerals and Energy, W.A.
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Department of Natural Resources and Environment, Vic.
Institute of Quarrying, Australia
Minerals Council of Australia
Royal Australian Chemical Institute
Sydney Water Corporation
Victorian WorkCover Authority
WorkCover New South Wales
Work Health Authority, N.T.
Workplace Standards Authority, Tas.

Additional interests participating in preparation of Standard:

Pyrotechnic Interests

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AS 2187.4—1998

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First published as AS 2187.4—1998.

Published by Standards Australia
(Standards Association of Australia)
1 The Crescent, Homebush, NSW 2140

ISBN 0 7327 1789 6
AVA Documents
Document Sharing Hub

PREFACE

This Standard was prepared by the Standards Australia Committee CE/5, Explosives, in response to the need, articulated by users of pyrotechnics for outdoor displays, that requirements for secure and safe working conditions be specified.

This Standard is one of a series dealing with explosives and pyrotechnics. The series consists of the following:

AS

- 2187 Explosives—Storage, transport and use
- 2187.0 Part 0: Terminology
- 2187.1 Part 1: Storage
- 2187.2 Part 2: Use of explosives
- 2187.4 Part 4: Pyrotechnics—Outdoor displays (this Standard)

It is proposed to publish a further three parts, consisting of the following:

- Use of explosives
- Pyrotechnics—Indoor theatrical and film sets
- Pyrotechnics—Marine distress signals
- Pyrotechnics—Shop goods fireworks

The objective of this Standard is to provide users of pyrotechnics for outdoor displays and regulatory authorities with acceptable requirements to minimize risk of injury to persons or damage to property.

Statements expressed in mandatory terms in notes to tables are deemed to be requirements of this Standard.

The terms ‘normative’ and ‘informative’ have been used in this Standard to define the application of the appendix to which they apply. A ‘normative’ appendix is an integral part of a Standard, whereas an ‘informative’ appendix is only for information and guidance.

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STANDARDS AUSTRALIA

Australian Standard

Explosives—Storage, transport and use

Part 4: Pyrotechnics—Outdoor displays

SECTION 1 SCOPE AND GENERAL

1.1 SCOPE This Standard sets out requirements and precautions, within a display site, for the storage, conveyance, handling and use of pyrotechnics for outdoor displays, and for conducting such displays. The Standard does not apply to pyrotechnics—

- (a) for indoor theatrical and film sets;
- (b) for marine distress signals;
- (c) classified as shop goods fireworks and toy fireworks; or
- (d) for model rocket motors.

1.2 APPLICATION This Standard applies only to those pyrotechnics used in outdoor displays.

NOTES:

- 1 Regulatory authorities controlling storage, handling and use of pyrotechnics for outdoor displays may have regulations or may otherwise impose conditions which differ from the requirements of this Standard.
- 2 Outdoor displays may be subject to legislative requirements and where necessary the operator should consult the regulatory authority.
- 3 Fire authorities and local councils may require notification and approval of a pyrotechnic display.

1.3 REFERENCED DOCUMENTS The following documents are referred to in this Standard:

AS

- 1319 Safety signs for the occupational environment
- 2187 Explosives—Storage, transport and use
- 2187.0 Part 0: Terminology
- 2187.1 Part 1: Storage
- 2187.2 Part 2: Use of explosives

AS/NZS

- 1337 Eye protectors for industrial applications
- 1801 Occupational protective helmets
- 1841 Portable fire extinguishers
- 1841.2 Part 2: Specific requirements for water type extinguishers
- 2210 Occupational protective footwear
- 2210.2 Part 2: Specification

Australian Explosives Code

1.4 DEFINITIONS For the purpose of this Standard, the definitions given in AS 2187.0 apply.

1.5 INSURANCE An operator who conducts an outdoor display for gain or reward shall have an appropriate and adequate liability insurance policy.

SECTION 2 GENERAL REQUIREMENTS

2.1 PRODUCTS

2.1.1 Manufacture Aerial shells shall be constructed so that they fit easily into the appropriate size mortar, and so that the lift charge and delay fuse ensure that the aerial shell reaches a safe altitude before functioning.

The altitude at which all burning particles or stars are extinguished above ground level shall be determined by testing.

Potassium or other inorganic chlorates shall not be a constituent of the pyrotechnic substance for display fireworks other than lances or smokes.

Aerial shells shall be classified and described only in terms of the inside diameter of the mortar in which they can be safely used, e.g. 75 mm aerial shells are only for use in 75 mm mortars.

Single-break salute aerial shells shall not exceed 75 mm in diameter or 75 mm in length (exclusive of the propellant charge). The maximum quantity of salute powder in such salutes shall not exceed 100 g.

For single-break aerial shells containing multiple internal salutes and for multi-break aerial shells, the maximum quantity of salute powder per internal unit shall not exceed 100 g with no more than 300 g total salute powder in any one aerial shell.

2.1.2 Testing Mortars shall be tested or certified by a competent person to ensure that they are of sufficient—

- (a) strength and durability to safely fire the aerial shells to be used; and
- (b) length to ensure aerial shells are propelled to an altitude where the aerial shell breaks without endangering persons or property.

2.1.3 Labelling and warnings

2.1.3.1 Aerial shells As a minimum, each aerial shell shall bear a label containing the following information:

- (a) A description of the size of the aerial shell (the diameter of the mortar to be used), e.g. '75 mm AERIAL SHELL'.
- (b) A description of the type of aerial shell, e.g. 'TWO-BREAK WITH REPORT'. The label or wrapper of any type of aerial salute shall be conspicuously marked with the word 'SALUTE'.
- (c) A warning statement bearing the words—

WARNING
DANGEROUS EXPLOSIVE, DO NOT HANDLE—
CONTACT POLICE OR FIRE BRIGADE
↑ THIS WAY UP

The words 'WARNING: DANGEROUS EXPLOSIVE' in the warning statement shall be printed in upper case letters having a printed image of at least 3 mm.

The remaining printed matter need not be printed in upper case letters but shall have a printed image of at least 3 mm.

The required statements shall be printed in a colour contrasting sharply with the background.