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AS 1768—1991
NZS/AS 1768—1991

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# Lightning protection

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**The following organizations are represented on the Committees responsible for this Standard:**

**Standards Australia Committee EL/24, Protection Against Lightning**

Association of Consulting Engineers Australia

Australian Corrosion Association

Australian Electrical and Electronic Manufacturers Association

Australian Institute of Petroleum

Building Owners and Managers Association of Australia

Confederation of Australian Industry

Department of Defence

Department of Minerals and Energy, N.S.W.

Department of Administrative Services—Australian Construction Services

Electricity Supply Association of Australia

Institution of Engineers Australia

Public Works Department, N.S.W.

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# PREFACE

This Standard is issued as a joint Standard under the terms of the Memorandum of Understanding between Standards Australia and the Standards Association of New Zealand with the objective of reducing technical barriers to trade between the two nations. It was prepared by the Standards Australia Committee on Protection against Lightning and, in Australia, it supersedes AS 1768–1983.

This Standard is intended to provide authoritative guidance on the principles and practice of lightning protection for a wide range of structures and systems, but excludes those owned or operated by public utilities and statutory authorities. It is not intended for mandatory application but, if called up in a contractual situation, compliance with this Standard requires compliance with all relevant clauses of the Standard. Alternative methods of protection to those described in this Standard will be the subject of future consideration.

In general, it is not economically possible to provide total protection against all the possible damaging effects of lightning, but the recommendations in this Standard will reduce the probability of damage to a low level, and will minimize any lightning damage that does occur. Guidance is given to methods of enhancing the level of protection against lightning damage, if this is required in a particular situation.

Following a review of submissions relating to AS 1768–1983, several changes and additions have been made to this Standard. Information is given on the protection of persons and equipment within buildings from the harmful effects of lightning strikes to the building, or to electrical power or communication services entering the building from remote sites. Revised recommendations are given relating to the compatibility of materials used in lightning protection systems, especially from the point of view of minimizing galvanic corrosion of components. In addition, changes have been made to recommendations for protection of the sides of tall buildings.

Unless it has been specified that lightning protection must be provided, the first decision to make is whether the lightning protection is needed. Section 2 provides guidance to assist in this decision. Section 3 provides advice on the protection of persons from lightning, mainly relating to the behaviour of persons when not inside substantial buildings. Once a decision is made that lightning protection is necessary, Section 4 will provide details on interception lightning protection for the building or structure. This includes information on the size, material, and form of conductors, the positioning of air terminations and downconductors, and the requirements for the earth terminations. Persons and equipment within buildings can be at risk from the indirect effects of lightning and Section 5 gives recommendations on the protective measures that may need to be applied.

Section 6 describes methods of lightning protection of various items not covered in earlier sections, such as communications aerials, chimneys, boats, fences, and trees. A new clause has been included on methods for protecting domestic dwellings, where a complete protection system may not be justified, but some protection is considered desirable.

Section 7 sets out recommendations for the protection of structures with explosive or highly flammable contents. Section 8 gives advice on inspecting, testing, and maintaining lightning protection systems.

A number of appendices are included which provide additional information and advice. The appendices form an integral part of this Standard unless specifically stated otherwise, i.e. appendices identified as ‘informative’ only provide supportive or background information and are therefore not an integral part of this Standard.

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