AS 1768:2021

Australian STANDARD®

STANDARDS Australia

Lightning protection

AS 1768:2021

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Australian Chamber of Commerce and Industry
Australian Industry Group
Clean Energy Council
Communications, Electrical and Plumbing Union — Electrical Division
Consult Australia
Department of Regional NSW
Electric Energy Society of Australia
Energy Networks Australia
Engineers Australia
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Master Builders Australia
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Preface

This Standard was prepared by the Australian members of the Joint Standards Australia/Standards New Zealand Committee EL-024, Protection Against Lightning, to supersede AS/NZS 1768:2007.

After consultation with stakeholders in both countries, Standards Australia and Standards New Zealand decided to develop this document as an Australian Standard rather than an Australian/New Zealand Standard.

The objective of this document is to provide requirements for and guidance on lightning protection for a wide range of structures and systems.

This document is a major revision of previous versions, which seeks to align with IEC standards. The major change is to recognize modern building practices and acknowledge that many modern buildings are inherently self-protecting.

This document is accompanied by a spreadsheet to be used to calculate the risk index for lightning protection.

The spreadsheet can be obtained on purchase of the document as a zip file for PDF purchasers, to be downloaded from the website of purchase. Delivery methods for any additional files may change over time.

The spreadsheet can only be used or reproduced by an authorized user in a way that meets the requirements of this document. It cannot be used for any other purpose.

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The terms “normative” and “informative” are used in Standards 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 for information and guidance only.

Contents

Introduction

Thunderstorms and lightning are natural phenomena and are largely unpredictable. As such, there are no proven devices or methods capable of preventing, deflecting or attracting lightning flashes. Direct and nearby cloud-to-ground lightning discharges can be hazardous to people, structures and installations. Conformance with this document will not necessarily prevent damage to assets or personal injury but will reduce the probability of damage and injuries.

A lightning protection system is designed to intercept a lightning strike, by placing air terminals at the points on a structure most likely to be struck, conduct the energy safely to earth and dissipate the energy into the ground. Additional measures aim to safely dissipate any energy impressed onto power or data lines, which would otherwise damage equipment within a structure.

Australian Standard®

Lightning protection

Section 1 Scope and general

1.1 Scope and application

1.1.1 Scope

This document specifies requirements for the design, installation, maintenance and testing of lightning protection on common structures, and for electrical and electronic systems within those structures.

These requirements cover the following:

(a) Assessment of risk.

(b) Protection of structures.

(c) Protection of electrical and electronic equipment.

(d) Testing and maintenance.

(e) Personal safety.

1.1.2 Application

This document applies to conventional lightning protection systems (LPSs) that comprise air terminals, downconductors, earth termination networks and surge protective devices (SPDs).

This document does not endorse nor imply the endorsement of non-conventional LPSs that comprise air terminals which claim enhanced performance, or downconductors which claim enhanced magnetic screening over conventional systems. The performance of such systems is outside the scope of this document.

For conformance to this document, air terminals shall be placed in accordance with Section 3.

The protection of specific occupancies is provided for in the following appendices:

(a) Appendix I for specific structures.

(b) Appendix J for structures with explosive or flammable contents.

(c) Appendix K for wind turbines.

(d) Appendix L for high voltage power systems.

(e) Appendix M for lightning risk in mines.

(f) Appendix N for solar photovoltaic installations.