SINGAPORE STANDARD

CP 33 : 1996

(ICS 91.120.40)

CODE OF PRACTICE FOR

Lightning protection

(Incorporating Amendment No. 1, February 1999)

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CODE OF PRACTICE FOR LIGHTNING PROTECTION

FOREWORD

This Code of Practice is a revision of Singapore Standard CP 33 : 1985 and was prepared by the Technical Committee on the Code of Practice for Lightning Protection under the direction of the Electrical Industry Practice Committee.

This Code is intended to give guidance on the principles and practice that experience has shown to be important in protecting structures against damage from lightning. It examines the characteristics of the lightning phenomenon and indicates the statistical nature of the evidence on which assessments for protection are based. It also provides guidance on the need for protection to be provided for structures in general.

The Committee considered methods for artificially increasing the range of attraction of a lightning conductor but on the evidence available, was unable to make a recommendation. It is noted that none of the reference codes used in the drafting of this Code recommends the use of such methods.

Guidance on protection of electronic equipment against lightning is included. It is emphasized that Appendices E and F are included for information only, and that compliance with Appendices E and F are not necessary for compliance with CP 33 as a whole unless invoked in a contract.

In preparing this Code, reference was made to the following overseas publications :

1. AS 1768 : 1991 Lightning protection

2. BS 6651 : 1992 Code of practice for protection of structures against lightning

Figure D.3 is reprinted from IEEE 1100 : 1992 'IEEE recommended practice for powering and grounding sensitive electronic equipment' Copyright © 1992 by the Institute of Electrical and Electronics Engineers, Inc. The IEEE disclaims any responsibility or liability resulting from the placement and use in this publication. Information is reprinted with the permission of the IEEE.

Acknowledgement is made for the use of information from the above publications.

NOTE:

1. Singapore Standards are subject to periodical review to keep abreast of technological changes and new technical developments. The revisions of Singapore Standards are announced through the issue of either amendment slips or revised editions.

2. Compliance with a Singapore Standard does not exempt users from legal obligations.

SECTION ONE

SCOPE AND GENERAL

1.1 SCOPE

This Code sets out guidelines for the protection of persons and property from hazards arising from exposure to lightning. The recommendations specifically cover the following applications:

(a) The protection of a variety of buildings or structures, including those with explosive or highly-flammable contents, and mines.

(b) The protection of persons, both outdoors, where they may be at risk from the direct effects of a lightning strike, and indoors, where they may be at risk indirectly as a consequence of lightning currents being conducted into the building.

(c) The protection including sensitive electronic equipment from overvoltages resulting from a lightning strike to the building or its associated services.

The nature of lightning and the principles of lightning protection are discussed and guidance is given to assist in the determination of whether protective measures should be taken.

The recommendations in this Code do not apply to the protection of large scale power or communication systems, nor do they apply to the protection of special structures such as oil and gas platforms.