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# JIS A 4201 : 2003

## (IEIEJ)

# Protection of structures against lightning

**ICS** 91.120.40

**Reference number : JIS A 4201 : 2003 (E)**

## Foreword

This translation has been made based on the original Japanese Industrial Standard revised by the Minister of Land, Infrastructure and Transport through deliberations at the Japanese Industrial Standards Committee, as the result of proposal for revision of Japanese Industrial Standard submitted by The Institute of Electrical Installation Engineers of Japan (IEIEJ) with the draft being attached, based on the provision of Article 12 Clause 1 of the Industrial Standardization Law applicable to the case of revision by the provision of Article 14. Consequently **JIS A 4201** : 1992 is replaced with this Standard.

In this revision, in order to conform Japanese Industrial Standard to International Standard, **IEC 61024-1** : 1990 *Protection structures against lightning—Part 1 : General principles* has been used as a base reference.

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In the event of any doubts arising as to the contents,
the original JIS is to be the final authority.

## Contents

# Protection of structures against lightning

**Introduction** This Japanese Industrial Standard has been prepared based on the first edition of **IEC 61024-1** : 1990 *Protection of structures against lightning—Part 1 : General principles* published in 1990 with some modifications of the technical contents.

Portions with continuous sidelines or dotted underlines are the matters in which the contents of the original International Standard have been modified. The list of modifications is shown in Annex 2 (informative) with the explanations.

It should be noted that a lightning protection system cannot prevent the formation of lightning.

A lightning protection system, designed and installed in accordance with this Standard, cannot guarantee absolute protection to structures, persons, or objects; however, application of this Standard will significantly reduce risk of damage caused by lightning to the structure protected by it.

The type and location of a lightning protection system should be carefully considered at the design stage of a new structure, thereby enabling maximum advantage to be taken of the electrically conductive parts of the structure. Thus design and construction of an integrated installation is made easier, the overall aesthetic aspects can be improved, and the effectiveness of the lightning protection system can be increased at minimum cost and effort.

Access to ground and proper use of foundation steelwork for the purpose of forming an effective earth termination may well be impossible once construction work on a site has commenced. Therefore, soil resistivity and the nature of the earth should be considered at the earliest possible stage of a project. This information is fundamental to the design of an earth termination system which may influence the foundation design work of architects.

To avoid unnecessary work, regular consultation between lightning protection system designers, architects, and builders is essential.

This Standard provides information on setting up Lightning Protection Systems (LPS) for common structures.

The design, installation and materials of LPS should fully comply with the provisions of this Standard.

## 1 General

### 1.1 Scope and object

**1.1.1 Scope** This Standard is applicable to the design and installation of Lightning Protection Systems (LPS) for structures, or installations such as chimneys, towers, oil tanks, or the like (hereafter referred to as "structures").

The following cases are outside the scope of this Standard:

a) railway systems;