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Lightning density based on lightning location systems – General principles

INTERNATIONAL
ELECTROTECHNICAL
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International Standard IEC 62858 has been prepared by IEC technical committee 81: Lightning protection.

This second edition cancels and replaces the first edition published in 2015. This edition constitutes a technical revision.

This edition includes the following significant technical changes with respect to the previous edition:

Two informative annexes are introduced dealing with the determination of lightning density for risk calculation (Annex A) and ground strike point calculation methods (Annex B).

The text of this International Standard is based on the following documents:

FDIS	Report on voting
81/627A/FDIS	81/634/RVD

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INTRODUCTION

International standards for lightning protection (e.g. IEC 62305-2) provide methods for the evaluation of the lightning risk on buildings and structures.

The lightning ground flash density N_G , defined as the mean number of ~~lightning~~ ~~flashes~~ ~~to~~ ~~ground~~ per square kilometre per year, and the ground strike point density N_{SG} , defined as the mean number of ground strike points per square kilometre per year ~~is~~ are the primary input parameters to perform such an evaluation (see Annex A).

In many areas of the world ~~N_G is derived from~~ data for risk evaluation are provided by lightning location systems (LLSs), but no common rule exists defining requirements either for their performance or for the elaboration of the measured data.

LIGHTNING DENSITY BASED ON LIGHTNING LOCATION SYSTEMS – GENERAL PRINCIPLES

1 Scope

This document introduces and discusses all necessary measures to make reliable and homogeneous the values of ground flash density, N_G and ground strike point density, N_{SG} , obtained from lightning location systems (LLSs) in various countries. Only parameters that are relevant to risk assessment are considered.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

IEC 62305-1, *Protection against lightning – Part 1: General principles*

IEC 62305-2, *Protection against lightning – Part 2: Risk management*

INTERNATIONAL STANDARD

NORME INTERNATIONALE



Lightning density based on lightning location systems – General principles

**Densité de foudroiement basée sur des systèmes de localisation
de la foudre (LLS) – Principes généraux**

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In many areas of the world data for risk evaluation are provided by lightning location systems (LLSs), but no common rule exists defining requirements either for their performance or for the elaboration of the measured data.

LIGHTNING DENSITY BASED ON LIGHTNING LOCATION SYSTEMS – GENERAL PRINCIPLES

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COMMISSION ÉLECTROTECHNIQUE INTERNATIONALE

DENSITÉ DE FOUROIEMENT BASÉE SUR DES SYSTÈMES DE LOCALISATION DE LA Foudre (LLS) – PRINCIPES GÉNÉRAUX

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Cette deuxième édition annule et remplace la première édition parue en 2015. Cette édition constitue une révision technique.

Cette édition inclut les modifications techniques majeures suivantes par rapport à l'édition précédente:

Introduction de deux annexes informatives, traitant de la détermination de la densité de foudroiement pour le calcul du risque (Annexe A) et des méthodes de calcul concernant les points d'impact au sol (Annexe B).

Le texte de cette Norme internationale est issu des documents suivants:

FDIS	Rapport de vote
81/627A/FDIS	81/634/RVD

Le rapport de vote indiqué dans le tableau ci-dessus donne toute information sur le vote ayant abouti à l'approbation de cette Norme internationale.

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INTRODUCTION

Les Normes internationales pour la protection contre la foudre (par exemple l'IEC 62305-2) fournissent des méthodes pour l'évaluation des risques de foudre sur les immeubles et autres structures.

La densité de foudroiement au sol N_G , définie comme le nombre moyen d'éclairs par kilomètre carré et par an et la densité de points d'impact au sol de la foudre N_{SG} , définie comme le nombre moyen de points d'impact au sol par kilomètre carré et par an, sont les paramètres d'entrée principaux pour effectuer de telles évaluations (voir l'Annexe A).

Dans de nombreuses régions du monde, les données d'évaluation des risques sont fournies par des systèmes de localisation de la foudre (LLS), mais il n'existe aucune règle commune définissant les exigences de performances ou d'élaboration des données de mesure.

DENSITÉ DE FOUROIEMENT BASÉE SUR DES SYSTÈMES DE LOCALISATION DE LA Foudre (LLS) – PRINCIPES GÉNÉRAUX

1 Domaine d'application

Le présent document décrit et étudie l'ensemble des mesures nécessaires pour rendre fiables et homogènes les valeurs de la densité de foudroiement au sol, N_G , et de la densité de points d'impact au sol, N_{SG} , obtenues par des systèmes de localisation de la foudre (LLS) dans différents pays. Seuls les paramètres essentiels à l'évaluation du risque sont pris en compte.

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IEC 62305-1, *Protection contre la foudre – Partie 1: Principes généraux*

IEC 62305-2, *Protection contre la foudre – Partie 2: Evaluation des risques*