



IEC 62561-1

Edition 3.0 2023-03  
REDLINE VERSION

# INTERNATIONAL STANDARD



---

**Lightning protection system components (LPSC) –  
Part 1: Requirements for connection components**

INTERNATIONAL  
ELECTROTECHNICAL  
COMMISSION

---

ICS 29.020; 91.120.40

ISBN 978-2-8322-6744-8

**Warning! Make sure that you obtained this publication from an authorized distributor.**

## CONTENTS

FOREWORD.....	4
INTRODUCTION.....	6
1 Scope.....	7
2 Normative references .....	7
3 Terms and definitions .....	7
4 Classification.....	11
4.1 According to the ability to withstand lightning current.....	11
4.2 According to the installation location.....	11
4.3 According to the mechanical behaviour of connection components .....	11
4.4 According to whether or not a connection is permanent .....	11
5 Requirements .....	11
5.1 General.....	11
5.2 Documentation and installation instructions .....	12
5.3 Marking.....	12
5.3.1 Content of marking .....	12
5.3.2 Durability and legibility.....	12
5.4 Lightning current carrying capability.....	12
5.5 Static mechanical <del>stress</del> withstand capability .....	13
5.6 Permanent connection .....	13
5.7 Non-permanent connection .....	13
5.8 Dismantling of test joints.....	13
<del>5.8 Damage to conductors and metal installations .....</del>	<del>13</del>
<del>5.9 Reliable connection .....</del>	<del>13</del>
<del>5.10 Terminals of bonding bars.....</del>	<del>13</del>
5.9 Expansion piece .....	14
6 Tests .....	14
6.1 General test conditions .....	14
6.2 Documentation and installation instructions .....	14
6.2.1 General test conditions .....	14
6.2.2 Acceptance criteria .....	14
6.3 Marking test.....	14
6.3.1 General test conditions .....	14
6.3.2 Acceptance criteria .....	15
6.4 Preparation of the specimen .....	15
6.5 Conditioning/ and ageing .....	21
<del>6.3.1 Connection components not embedded in concrete .....</del>	<del>14</del>
<del>6.3.2 Connection components embedded in concrete .....</del>	<del>15</del>
6.6 Electrical test.....	21
6.6.1 General test conditions .....	21
6.6.2 Acceptance criteria .....	22
6.7 Static mechanical withstand-capability test .....	24
7 Electromagnetic compatibility (EMC) .....	24
8 Structure and content of the test report.....	24
8.1 General.....	24
8.2 Report identification .....	25
8.3 Specimen description.....	25

8.4	Conductor .....	25
8.5	Standards and references .....	25
8.6	Test procedure.....	26
8.7	Testing equipment description .....	26
8.8	Measuring instruments description.....	26
8.9	Results and parameters recorded .....	26
8.10	Statement of pass or fail .....	26
Annex A (normative) Summary of the requirements and corresponding tests .....		27
Annex B (informative) Typical connection <del>configurations</del> arrangements for various LPSC .....		28
Annex C (normative) Flowchart of tests for connection components .....		29
Annex D (normative) Conditioning/ and ageing for connection components.....		30
D.1	General.....	30
D.2	Salt mist treatment.....	30
D.3	Humid sulphurous atmosphere treatment .....	30
D.4	Ammonia atmosphere treatment.....	30
Annex E (normative) Reduced test procedures .....		31
Bibliography.....		32
Figure 1 – Basic arrangement of specimen with cross-connection component.....		16
Figure 2 – Basic arrangement of specimen with parallel connection component.....		17
<del>Figure 3 – Basic arrangement of specimen with bridging component.....</del>		<del>18</del>
Figure 3 – Basic arrangement of specimen with expansion piece or bridging component.....		19
Figure 4 – Basic arrangement of specimen with equipotential bonding bar .....		20
Figure 5 – Basic arrangement of specimen with clamped connection of reinforcing rods .....		20
Figure 6 – Basic arrangement of specimen with welded, brazed or exothermic connections of reinforcing rods .....		21
Figure 7 – Basic arrangement for contact measurement of expansion piece or bridging component.....		22
Figure 8 – Examples of sequence of loosening of bolts and screws .....		23
Figure B.1 – Typical arrangements for various LPSC .....		28
Figure C.1 – Flowchart of tests for connection components .....		29
Table 1 – Lightning impulse current ( $I_{imp}$ ) parameters.....		22
Table A.1 – Requirements and corresponding tests .....		27
Table E.1 – Reduced test procedures for connection components complying with IEC 62561-1:2017 or IEC 62561-1:2012.....		31

# INTERNATIONAL ELECTROTECHNICAL COMMISSION

---

## LIGHTNING PROTECTION SYSTEM COMPONENTS (LPSC) –

### Part 1: Requirements for connection components

#### FOREWORD

- 1) The International Electrotechnical Commission (IEC) is a worldwide organization for standardization comprising all national electrotechnical committees (IEC National Committees). The object of IEC is to promote international co-operation on all questions concerning standardization in the electrical and electronic fields. To this end and in addition to other activities, IEC publishes International Standards, Technical Specifications, Technical Reports, Publicly Available Specifications (PAS) and Guides (hereafter referred to as “IEC Publication(s)”). Their preparation is entrusted to technical committees; any IEC National Committee interested in the subject dealt with may participate in this preparatory work. International, governmental and non-governmental organizations liaising with the IEC also participate in this preparation. IEC collaborates closely with the International Organization for Standardization (ISO) in accordance with conditions determined by agreement between the two organizations.
- 2) The formal decisions or agreements of IEC on technical matters express, as nearly as possible, an international consensus of opinion on the relevant subjects since each technical committee has representation from all interested IEC National Committees.
- 3) IEC Publications have the form of recommendations for international use and are accepted by IEC National Committees in that sense. While all reasonable efforts are made to ensure that the technical content of IEC Publications is accurate, IEC cannot be held responsible for the way in which they are used or for any misinterpretation by any end user.
- 4) In order to promote international uniformity, IEC National Committees undertake to apply IEC Publications transparently to the maximum extent possible in their national and regional publications. Any divergence between any IEC Publication and the corresponding national or regional publication shall be clearly indicated in the latter.
- 5) IEC itself does not provide any attestation of conformity. Independent certification bodies provide conformity assessment services and, in some areas, access to IEC marks of conformity. IEC is not responsible for any services carried out by independent certification bodies.
- 6) All users should ensure that they have the latest edition of this publication.
- 7) No liability shall attach to IEC or its directors, employees, servants or agents including individual experts and members of its technical committees and IEC National Committees for any personal injury, property damage or other damage of any nature whatsoever, whether direct or indirect, or for costs (including legal fees) and expenses arising out of the publication, use of, or reliance upon, this IEC Publication or any other IEC Publications.
- 8) Attention is drawn to the Normative references cited in this publication. Use of the referenced publications is indispensable for the correct application of this publication.
- 9) Attention is drawn to the possibility that some of the elements of this IEC Publication may be the subject of patent rights. IEC shall not be held responsible for identifying any or all such patent rights.

**This redline version of the official IEC Standard allows the user to identify the changes made to the previous edition IEC 62561-1:2017. A vertical bar appears in the margin wherever a change has been made. Additions are in green text, deletions are in strikethrough red text.**

IEC 62561-1 has been prepared by IEC technical committee 81: Lightning protection. It is an International Standard.

This third edition cancels and replaces the second edition published in 2017. This edition constitutes a technical revision.

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

- a) definitions of connection types mentioned in the scope have been added;
- b) location classification has been expanded in detail;
- c) the document has been updated in line with the new edition of ISO 22479:2019 on humid sulphurous atmosphere treatment;
- d) a new normative Annex E for reduced test procedures has been introduced.

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

Draft	Report on voting
81/721/FDIS	81/724/RVD

Full information on the voting for its approval can be found in the report on voting indicated in the above table.

The language used for the development of this International Standard is English.

This document was drafted in accordance with ISO/IEC Directives, Part 2, and developed in accordance with ISO/IEC Directives, Part 1 and ISO/IEC Directives, IEC Supplement, available at [www.iec.ch/members\\_experts/refdocs](http://www.iec.ch/members_experts/refdocs). The main document types developed by IEC are described in greater detail at [www.iec.ch/publications](http://www.iec.ch/publications).

A list of all parts in the IEC 62561 series, published under the general title *Lightning protection system components (LPSC)*, can be found on the IEC website.

The committee has decided that the contents of this document will remain unchanged until the stability date indicated on the IEC website under [webstore.iec.ch](http://webstore.iec.ch) in the data related to the specific document. At this date, the document will be

- reconfirmed,
- withdrawn,
- replaced by a revised edition, or
- amended.

**IMPORTANT – The "colour inside" logo on the cover page of this document indicates that it contains colours which are considered to be useful for the correct understanding of its contents. Users should therefore print this document using a colour printer.**

## INTRODUCTION

This part of IEC 62561 deals with the requirements and tests for lightning protection system components (LPSC) used for the installation of a lightning protection system (LPS) designed and implemented according to the IEC 62305 series.

## LIGHTNING PROTECTION SYSTEM COMPONENTS (LPSC) –

### Part 1: Requirements for connection components

#### 1 Scope

This part of IEC 62561 specifies the requirements and tests for metallic connection components that form part of a lightning protection system (LPS). Typically, these can be connectors, clamps, bonding and bridging components, expansion pieces and test joints.

For the purposes of this document the following connection types are considered as connection components: exothermic, brazing, welding, clamping, crimping, seaming, screwing or bolting.

Testing of components for an explosive atmosphere is not covered by this document.

#### 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 60068-2-52:1996/2017, *Environmental testing – Part 2-52: Tests – Test Kb: Salt mist, cyclic (sodium chloride solution)*

IEC 62561-2, *Lightning protection system components (LPSC) – Part 2: Requirements for conductors and earth electrodes*

ISO 6957:1988, *Copper alloys – Ammonia test for stress corrosion resistance*

~~ISO 6988:1985, *Metallic and other non-organic coatings – Sulphur dioxide test with general condensation of moisture*~~

ISO 22479:2019, *Corrosion of metals and alloys – Sulfur dioxide test in a humid atmosphere (fixed gas method)*

# INTERNATIONAL STANDARD

# NORME INTERNATIONALE

---

**Lightning protection system components (LPSC) –  
Part 1: Requirements for connection components**

**Composants des systèmes de protection contre la foudre (CSPF) –  
Partie 1: Exigences pour les composants de connexion**



## CONTENTS

FOREWORD.....	4
INTRODUCTION.....	6
1 Scope.....	7
2 Normative references .....	7
3 Terms and definitions .....	7
4 Classification.....	11
4.1 According to the ability to withstand lightning current.....	11
4.2 According to the installation location.....	11
4.3 According to the mechanical behaviour of connection components .....	11
4.4 According to whether or not a connection is permanent .....	11
5 Requirements .....	11
5.1 General.....	11
5.2 Documentation and installation instructions .....	11
5.3 Marking.....	12
5.3.1 Content of marking .....	12
5.3.2 Durability and legibility.....	12
5.4 Lightning current carrying capability.....	12
5.5 Static mechanical withstand capability .....	12
5.6 Permanent connection .....	12
5.7 Non-permanent connection .....	13
5.8 Dismantling of test joints.....	13
5.9 Expansion piece .....	13
6 Tests .....	13
6.1 General test conditions .....	13
6.2 Documentation and installation instructions .....	14
6.2.1 General test conditions.....	14
6.2.2 Acceptance criteria .....	14
6.3 Marking test.....	14
6.3.1 General test conditions.....	14
6.3.2 Acceptance criteria .....	14
6.4 Preparation of the specimen .....	14
6.5 Conditioning and ageing .....	19
6.6 Electrical test.....	19
6.6.1 General test conditions.....	19
6.6.2 Acceptance criteria .....	20
6.7 Static mechanical withstand-capability test .....	21
7 Electromagnetic compatibility (EMC) .....	21
8 Structure and content of the test report.....	22
8.1 General.....	22
8.2 Report identification.....	22
8.3 Specimen description.....	22
8.4 Conductor .....	22
8.5 Standards and references .....	23
8.6 Test procedure.....	23
8.7 Testing equipment description .....	23
8.8 Measuring instruments description.....	23

8.9	Results and parameters recorded .....	23
8.10	Statement of pass or fail .....	23
Annex A (normative)	Summary of the requirements and corresponding tests .....	24
Annex B (informative)	Typical connection arrangements for various LPSC .....	25
Annex C (normative)	Flow chart of tests for connection components .....	26
Annex D (normative)	Conditioning and ageing for connection components .....	27
D.1	General .....	27
D.2	Salt mist treatment .....	27
D.3	Humid sulphurous atmosphere treatment .....	27
D.4	Ammonia atmosphere treatment .....	27
Annex E (normative)	Reduced test procedures .....	28
Bibliography	.....	29
Figure 1	– Basic arrangement of specimen with cross-connection component .....	15
Figure 2	– Basic arrangement of specimen with parallel connection component .....	16
Figure 3	– Basic arrangement of specimen with expansion piece or bridging component .....	17
Figure 4	– Basic arrangement of specimen with equipotential bonding bar .....	18
Figure 5	– Basic arrangement of specimen with clamped connection of reinforcing rods .....	18
Figure 6	– Basic arrangement of specimen with welded, brazed or exothermic connections of reinforcing rods .....	19
Figure 7	– Basic arrangement for contact measurement of expansion piece or bridging component .....	20
Figure 8	– Examples of sequence of loosening of bolts and screws .....	21
Figure B.1	– Typical arrangements for various LPSC .....	25
Figure C.1	– Flowchart of tests for connection components .....	26
Table 1	– Lightning impulse current ( $I_{imp}$ ) parameters .....	20
Table A.1	– Requirements and corresponding tests .....	24
Table E.1	– Reduced test procedures for connection components complying with IEC 62561-1:2017 or IEC 62561-1:2012 .....	28

# INTERNATIONAL ELECTROTECHNICAL COMMISSION

---

## LIGHTNING PROTECTION SYSTEM COMPONENTS (LPSC) –

### Part 1: Requirements for connection components

#### FOREWORD

- 1) The International Electrotechnical Commission (IEC) is a worldwide organization for standardization comprising all national electrotechnical committees (IEC National Committees). The object of IEC is to promote international co-operation on all questions concerning standardization in the electrical and electronic fields. To this end and in addition to other activities, IEC publishes International Standards, Technical Specifications, Technical Reports, Publicly Available Specifications (PAS) and Guides (hereafter referred to as “IEC Publication(s)”). Their preparation is entrusted to technical committees; any IEC National Committee interested in the subject dealt with may participate in this preparatory work. International, governmental and non-governmental organizations liaising with the IEC also participate in this preparation. IEC collaborates closely with the International Organization for Standardization (ISO) in accordance with conditions determined by agreement between the two organizations.
- 2) The formal decisions or agreements of IEC on technical matters express, as nearly as possible, an international consensus of opinion on the relevant subjects since each technical committee has representation from all interested IEC National Committees.
- 3) IEC Publications have the form of recommendations for international use and are accepted by IEC National Committees in that sense. While all reasonable efforts are made to ensure that the technical content of IEC Publications is accurate, IEC cannot be held responsible for the way in which they are used or for any misinterpretation by any end user.
- 4) In order to promote international uniformity, IEC National Committees undertake to apply IEC Publications transparently to the maximum extent possible in their national and regional publications. Any divergence between any IEC Publication and the corresponding national or regional publication shall be clearly indicated in the latter.
- 5) IEC itself does not provide any attestation of conformity. Independent certification bodies provide conformity assessment services and, in some areas, access to IEC marks of conformity. IEC is not responsible for any services carried out by independent certification bodies.
- 6) All users should ensure that they have the latest edition of this publication.
- 7) No liability shall attach to IEC or its directors, employees, servants or agents including individual experts and members of its technical committees and IEC National Committees for any personal injury, property damage or other damage of any nature whatsoever, whether direct or indirect, or for costs (including legal fees) and expenses arising out of the publication, use of, or reliance upon, this IEC Publication or any other IEC Publications.
- 8) Attention is drawn to the Normative references cited in this publication. Use of the referenced publications is indispensable for the correct application of this publication.
- 9) Attention is drawn to the possibility that some of the elements of this IEC Publication may be the subject of patent rights. IEC shall not be held responsible for identifying any or all such patent rights.

IEC 62561-1 has been prepared by IEC technical committee 81: Lightning protection. It is an International Standard.

This third edition cancels and replaces the second edition published in 2017. This edition constitutes a technical revision.

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

- a) definitions of connection types mentioned in the scope have been added;
- b) location classification has been expanded in detail;
- c) the document has been updated in line with the new edition of ISO 22479:2019 on humid sulphurous atmosphere treatment;
- d) a new normative Annex E for reduced test procedures has been introduced.

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

Draft	Report on voting
81/721/FDIS	81/724/RVD

Full information on the voting for its approval can be found in the report on voting indicated in the above table.

The language used for the development of this International Standard is English.

This document was drafted in accordance with ISO/IEC Directives, Part 2, and developed in accordance with ISO/IEC Directives, Part 1 and ISO/IEC Directives, IEC Supplement, available at [www.iec.ch/members\\_experts/refdocs](http://www.iec.ch/members_experts/refdocs). The main document types developed by IEC are described in greater detail at [www.iec.ch/publications](http://www.iec.ch/publications).

A list of all parts in the IEC 62561 series, published under the general title *Lightning protection system components (LPSC)*, can be found on the IEC website.

The committee has decided that the contents of this document will remain unchanged until the stability date indicated on the IEC website under [webstore.iec.ch](http://webstore.iec.ch) in the data related to the specific document. At this date, the document will be

- reconfirmed,
- withdrawn,
- replaced by a revised edition, or
- amended.

## INTRODUCTION

This part of IEC 62561 deals with the requirements and tests for lightning protection system components (LPSC) used for the installation of a lightning protection system (LPS) designed and implemented according to the IEC 62305 series.

## LIGHTNING PROTECTION SYSTEM COMPONENTS (LPSC) –

### Part 1: Requirements for connection components

#### 1 Scope

This part of IEC 62561 specifies the requirements and tests for metallic connection components that form part of a lightning protection system (LPS). Typically, these can be connectors, clamps, bonding and bridging components, expansion pieces and test joints.

For the purposes of this document the following connection types are considered as connection components: exothermic, brazing, welding, clamping, crimping, seaming, screwing or bolting.

Testing of components for an explosive atmosphere is not covered by this document.

#### 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 60068-2-52:2017, *Environmental testing – Part 2-52: Tests – Test Kb: Salt mist, cyclic (sodium chloride solution)*

IEC 62561-2, *Lightning protection system components (LPSC) – Part 2: Requirements for conductors and earth electrodes*

ISO 6957:1988, *Copper alloys – Ammonia test for stress corrosion resistance*

ISO 22479:2019, *Corrosion of metals and alloys – Sulfur dioxide test in a humid atmosphere (fixed gas method)*

## SOMMAIRE

AVANT-PROPOS .....	32
INTRODUCTION.....	34
1 Domaine d'application .....	35
2 Références normatives .....	35
3 Termes et définitions .....	35
4 Classification.....	39
4.1 En fonction de leur tenue aux courants de foudre .....	39
4.2 En fonction de leur emplacement d'installation.....	39
4.3 En fonction de leur comportement mécanique.....	39
4.4 En fonction du caractère permanent ou non de la connexion.....	39
5 Exigences.....	39
5.1 Généralités .....	39
5.2 Documentation et instructions d'installation.....	40
5.3 Marquage .....	40
5.3.1 Contenu du marquage .....	40
5.3.2 Durabilité et lisibilité .....	40
5.4 Capacité de tenue au courant de foudre.....	40
5.5 Capacité de tenue aux contraintes mécaniques statiques .....	41
5.6 Connexion permanente .....	41
5.7 Connexion non permanente .....	41
5.8 Démontage des joints de contrôle .....	41
5.9 Pièce de dilatation .....	41
6 Essais .....	41
6.1 Conditions générales d'essais.....	41
6.2 Documentation et instructions d'installation.....	42
6.2.1 Conditions générales d'essais .....	42
6.2.2 Critères d'acceptation .....	42
6.3 Essai du marquage .....	42
6.3.1 Conditions générales d'essais .....	42
6.3.2 Critères d'acceptation .....	42
6.4 Préparation de l'échantillon.....	42
6.5 Conditionnement et vieillissement.....	47
6.6 Essai électrique .....	47
6.6.1 Conditions générales d'essais .....	47
6.6.2 Critères d'acceptation .....	48
6.7 Essai de capacité de tenue aux contraintes mécaniques statiques.....	49
7 Compatibilité électromagnétique (CEM).....	49
8 Structure et contenu du rapport d'essai .....	50
8.1 Généralités .....	50
8.2 Identification du rapport .....	50
8.3 Description de l'échantillon .....	50
8.4 Conducteur .....	51
8.5 Normes et références.....	51
8.6 Procédure d'essai .....	51
8.7 Description des équipements d'essai .....	51
8.8 Description des instruments de mesure.....	51

8.9	Résultats et paramètres enregistrés.....	51
8.10	Déclaration d'acceptation ou de refus .....	51
Annexe A (normative)	Récapitulatif des exigences et des essais correspondants .....	52
Annexe B (informative)	Configurations de connexion types pour différents CSPF .....	53
Annexe C (normative)	Logigramme des essais destinés aux composants de connexion.....	54
Annexe D (normative)	Conditionnement et vieillissement pour les composants de connexion .....	55
D.1	Généralités .....	55
D.2	Traitement au brouillard salin.....	55
D.3	Traitement en atmosphère humide sulfureuse.....	55
D.4	Traitement en atmosphère ammoniacale.....	55
Annexe E (normative)	Procédures d'essai simplifiées .....	56
Bibliographie.....		57
Figure 1	– Montage de base des échantillons avec composant à connexion croisée .....	43
Figure 2	– Montage de base des échantillons avec composant à connexion parallèle .....	44
Figure 3	– Montage de base des échantillons avec pièce de dilatation ou composant de pontage.....	45
Figure 4	– Montage de base des échantillons avec barre d'équipotentialité.....	46
Figure 5	– Montage de base des échantillons avec connexion par serrage de tiges de renfort.....	46
Figure 6	– Montage de base des échantillons avec connexion par brasage, soudage ou soudure exothermique de tiges de renfort .....	47
Figure 7	– Montage de base pour le mesurage du contact de la pièce de dilatation ou du composant de pontage.....	48
Figure 8	– Exemples de séquences de desserrage des boulons et vis .....	49
Figure B.1	– Montages types pour différents CSPF .....	53
Figure C.1	– Logigramme des essais destinés aux composants de connexion .....	54
Tableau 1	– Paramètres du courant de foudre ( $I_{imp}$ ) .....	48
Tableau A.1	– Exigences et essais correspondants.....	52
Tableau E.1	– Procédures d'essai simplifiées pour les composants de connexion conformes à l'IEC 62561-1:2017 ou l'IEC 62561-1:2012.....	56



## COMMISSION ÉLECTROTECHNIQUE INTERNATIONALE

---

### COMPOSANTS DES SYSTÈMES DE PROTECTION CONTRE LA Foudre (CSPF) –

#### Partie 1: Exigences pour les composants de connexion

##### AVANT-PROPOS

- 1) La Commission Électrotechnique Internationale (IEC) est une organisation mondiale de normalisation composée de l'ensemble des comités électrotechniques nationaux (Comités nationaux de l'IEC). L'IEC a pour objet de favoriser la coopération internationale pour toutes les questions de normalisation dans les domaines de l'électricité et de l'électronique. A cet effet, l'IEC – entre autres activités – publie des Normes internationales, des Spécifications techniques, des Rapports techniques, des Spécifications accessibles au public (PAS) et des Guides (ci-après dénommés "Publication(s) de l'IEC"). Leur élaboration est confiée à des comités d'études, aux travaux desquels tout Comité national intéressé par le sujet traité peut participer. Les organisations internationales, gouvernementales et non gouvernementales, en liaison avec l'IEC, participent également aux travaux. L'IEC collabore étroitement avec l'Organisation Internationale de Normalisation (ISO), selon des conditions fixées par accord entre les deux organisations.
- 2) Les décisions ou accords officiels de l'IEC concernant les questions techniques représentent, dans la mesure du possible, un accord international sur les sujets étudiés, étant donné que les Comités nationaux de l'IEC intéressés sont représentés dans chaque comité d'études.
- 3) Les Publications de l'IEC se présentent sous la forme de recommandations internationales et sont agréées comme telles par les Comités nationaux de l'IEC. Tous les efforts raisonnables sont entrepris afin que l'IEC s'assure de l'exactitude du contenu technique de ses publications; l'IEC ne peut pas être tenue responsable de l'éventuelle mauvaise utilisation ou interprétation qui en est faite par un quelconque utilisateur final.
- 4) Dans le but d'encourager l'uniformité internationale, les Comités nationaux de l'IEC s'engagent, dans toute la mesure possible, à appliquer de façon transparente les Publications de l'IEC dans leurs publications nationales et régionales. Toutes divergences entre toutes Publications de l'IEC et toutes publications nationales ou régionales correspondantes doivent être indiquées en termes clairs dans ces dernières.
- 5) L'IEC elle-même ne fournit aucune attestation de conformité. Des organismes de certification indépendants fournissent des services d'évaluation de conformité et, dans certains secteurs, accèdent aux marques de conformité de l'IEC. L'IEC n'est responsable d'aucun des services effectués par les organismes de certification indépendants.
- 6) Tous les utilisateurs doivent s'assurer qu'ils sont en possession de la dernière édition de cette publication.
- 7) Aucune responsabilité ne doit être imputée à l'IEC, à ses administrateurs, employés, auxiliaires ou mandataires, y compris ses experts particuliers et les membres de ses comités d'études et des Comités nationaux de l'IEC, pour tout préjudice causé en cas de dommages corporels et matériels, ou de tout autre dommage de quelque nature que ce soit, directe ou indirecte, ou pour supporter les coûts (y compris les frais de justice) et les dépenses découlant de la publication ou de l'utilisation de cette Publication de l'IEC ou de toute autre Publication de l'IEC, ou au crédit qui lui est accordé.
- 8) L'attention est attirée sur les références normatives citées dans cette publication. L'utilisation de publications référencées est obligatoire pour une application correcte de la présente publication.
- 9) L'attention est attirée sur le fait que certains des éléments du présent document de l'IEC peuvent faire l'objet de droits de brevet. L'IEC ne saurait être tenue pour responsable de ne pas avoir identifié de tels droits de brevets.

L'IEC 62561-1 a été établie par le comité d'études 81: Protection contre la foudre. Il s'agit d'une Norme internationale.

Cette troisième édition annule et remplace la deuxième édition parue en 2017. Cette édition constitue une révision technique.

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

- a) les définitions des types de connexions mentionnés dans le domaine d'application du document ont été ajoutées;
- b) la classification des emplacements a été développée de façon détaillée;

- c) le document a été mis à jour conformément à la nouvelle édition de l'ISO 22479:2019 concernant le traitement en atmosphère humide sulfureuse;
- d) la nouvelle Annexe E normative concernant les procédures d'essai simplifiées a été introduite.

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

Projet	Rapport de vote
81/721/FDIS	81/724/RVD

Le rapport de vote indiqué dans le tableau ci-dessus donne toute information sur le vote ayant abouti à son approbation.

La langue employée pour l'élaboration de cette Norme internationale est l'anglais.

Ce document a été rédigé selon les Directives ISO/IEC, Partie 2, il a été développé selon les Directives ISO/IEC, Partie 1 et les Directives ISO/IEC, Supplément IEC, disponibles sous [www.iec.ch/members\\_experts/refdocs](http://www.iec.ch/members_experts/refdocs). Les principaux types de documents développés par l'IEC sont décrits plus en détail sous [www.iec.ch/publications](http://www.iec.ch/publications).

Une liste de toutes les parties de la série IEC 62561, publiée sous le titre général *Composants des systèmes de protection contre la foudre (CSPF)*, se trouve sur le site web de l'IEC.

Le comité a décidé que le contenu de ce document ne sera pas modifié avant la date de stabilité indiquée sur le site web de l'IEC sous [webstore.iec.ch](http://webstore.iec.ch) dans les données relatives au document recherché. A cette date, le document sera

- reconduit,
- supprimé,
- remplacé par une édition révisée, ou
- amendé.

## INTRODUCTION

La présente partie de l'IEC 62561 traite des exigences et des essais pour les composants des systèmes de protection contre la foudre (CSPF) utilisés pour l'installation d'un système de protection contre la foudre (SPF) conçu et mis en œuvre conformément à la série IEC 62305.

## COMPOSANTS DES SYSTÈMES DE PROTECTION CONTRE LA Foudre (CSPF) –

### Partie 1: Exigences pour les composants de connexion

#### 1 Domaine d'application

La présente partie de l'IEC 62561 spécifie les exigences et les essais applicables aux composants métalliques de connexion qui font partie d'un système de protection contre la foudre (SPF). Il peut s'agir, en général, des connecteurs, des colliers de serrage, des composants de collage et de pontage, des pièces de dilatation et des joints de contrôle.

Pour les besoins du présent document, les types de connexions suivants sont considérés comme des composants de connexion: la soudure exothermique, le brasage, le soudage, le serrage, le sertissage, l'agrafage, le vissage et le boulonnage.

Les essais de composants pour atmosphère explosive ne sont pas concernés par le présent document.

#### 2 Références normatives

Les documents suivants sont cités dans le texte de sorte qu'ils constituent, pour tout ou partie de leur contenu, des exigences du présent document. Pour les références datées, seule l'édition citée s'applique. Pour les références non datées, la dernière édition du document de référence s'applique (y compris les éventuels amendements).

IEC 60068-2-52:2017, *Essais d'environnement – Partie 2-52: Essais – Essai Kb: Brouillard salin, essai cyclique (solution de chlorure de sodium)*

IEC 62561-2, *Composants des systèmes de protection contre la foudre (CSPF) – Partie 2: Exigences pour les conducteurs et les électrodes de terre*

ISO 6957:1988, *Alliages de cuivre – Essai à l'ammoniaque pour la résistance à la corrosion sous contrainte*

ISO 22479:2019, *Corrosion des métaux et alliages – Essai au dioxyde de soufre en atmosphère humide (méthode avec volume fixe de gaz)*