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INTERNATIONAL STANDARD

NORME INTERNATIONALE

Lightning protection system components (LPSC) – Part 7: Requirements for earthing enhancing compounds

Composants des systèmes de protection contre la foudre (CSPF) – Partie 7: Exigences pour les enrichisseurs de terre



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IEC Secretariat
3, rue de Varembé
CH-1211 Geneva 20
Switzerland

Tel.: +41 22 919 02 11
info@iec.ch
www.iec.ch

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LIGHTNING PROTECTION SYSTEM COMPONENTS (LPSC) –

Part 7: Requirements for earthing enhancing compounds

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IEC 62561-7 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 2018. This edition constitutes a technical revision.

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

a) Figure A.1 has been replaced with a simpler one that clearly shows the high and low corrosion load limits of the earth enhancing compounds without the need for special knowledge;
b) pH measurement has been introduced.

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

Draft	Report on voting
81/755/FDIS	81/761/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. The main document types developed by IEC are described in greater detail at 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 in the data related to the specific document. At this date, the document will be

- reconfirmed,
- withdrawn, or
- revised.

INTRODUCTION

This part of IEC 62561 deals with the requirements and tests for earthing enhancing compounds used as lightning protection system components (LPSC) designed and implemented in accordance with the IEC 62305 series.

LIGHTNING PROTECTION SYSTEM COMPONENTS (LPSC) –

Part 7: Requirements for earthing enhancing compounds

1 Scope

This part of IEC 62561 specifies the requirements and tests for earthing enhancing compounds producing low resistance of an earth termination system.

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.

ISO 4689-3, *Iron ores – Determination of sulfur content – Part 3: Combustion/infrared method*

EN 12457-2, *Characterisation of waste – Leaching – Compliance test for leaching of granular waste materials and sludges – Part 2: One stage batch test at a liquid to solid ratio of 10 l/kg for materials with particle size below 4 mm (without or with size reduction)*

CEN/TR 16192, *Waste – Guidance on analysis of eluates*

ASTM G57-20, *Standard Test Method for Measurement of Soil Resistivity Using the Wenner Four-Electrode Method*

ASTM G59-97, *Standard Test Method for Conducting Potentiodynamic Polarization Resistance Measurements*

ASTM G102-89, *Standard Practice for Calculation of Corrosion Rates and Related Information from Electrochemical Measurements*

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

ISO and IEC maintain terminology databases for use in standardization at the following addresses:

- IEC Electropedia: available at https://www.electropedia.org/
- ISO Online browsing platform: available at https://www.iso.org/obp

3.1
earthing enhancing compound
EEC
low resistivity compound that is intended to lower the resistance to earth of an earth termination system when added between the buried earth electrode and the surrounding soil

3.2
leaching test
test during which the earthing enhancing compound is put into contact with a leachant and some constituents of the material are extracted

3.3
aggressive EEC
compound characterized by a pH value and resistivity within the range specified in Annex A

3.4
non-aggressive EEC
compound characterized by a pH value and resistivity within the range specified in Annex A

4 Requirements

4.1 General

Earthing enhancing compounds shall be so designed and constructed that in normal use their performance is reliable and without danger to persons and the surrounding environment.

The choice of a material depends on its ability to match the requirements of a particular application.

NOTE National regulations can apply.

4.2 Documentation and installation instructions

The manufacturer or supplier of the earthing enhancing compounds shall provide adequate information in his literature to ensure that the installer can select and install the materials in a suitable and safe manner, containing the following information:

a) preparation instructions;

b) installation instructions;

c) resistivity value and the test method used;

d) conformity statement to the present document (IEC 62561-7).

Compliance is checked in accordance with 5.7.

The manufacturer’s literature shall contain information on how to maintain the characteristics of the earthing enhancing compound so it remains stable over time.

4.3 Material

The material of the earthing enhancing compound shall be chemically inert to subsoil. It shall not pollute the environment. It shall provide a stable environment in terms of physical and chemical properties.

Compliance is checked by the tests specified in 5.2, 5.3, 5.4, 5.5 and 5.6.

4.4 Marking

All products complying with this document shall have indelible markings containing at least the following information:

a) manufacturer's or responsible vendor's name or its trademark;

b) any identifying symbol;

c) the type or the serial number of the batch of the earthing enhancing compound;