PD CLC/TS 50703-1:2021

BSI Standards Publication

Lightning Protection System Components (LPSC)

Part 1: Testing requirements for metal sheets joints used in LPS

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National foreword

This Published Document is the UK implementation of CLC/TS 50703-1:2021. It supersedes PD CLC/TS 50703-1:2019, which is withdrawn.

The UK participation in its preparation was entrusted to Technical Committee GEL/81, Protection against lightning.

A list of organizations represented on this committee can be obtained on request to its committee manager.

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English Version

Lightning Protection System Components (LPSC) - Part 1: Testing requirements for metal sheets' joints used in LPS

Blitzschutzsystembauteile (LPSC) – Teil 1: Prüfanforderungen für in Blitzschutzsystemen (LPS) verwendete Verbindungsstellen zwischen Metallblechen

This Technical Specification was approved by CENELEC on 11 May 2021.

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European foreword

This document (CLC/TS 50703-1:2021) has been prepared by CLC/TC 81X "Lightning protection".

This document supersedes CLC/TS 50703-1:2019.

The document includes the following significant changes with respect to the previous edition:

a) precise terms / definitions are given for the reader to understand and distinguish the under discussion types of the joints of metal sheets;

b) conditioning tests have been added which contribute significant on the lightning current capability;

c) two new classifications have been added as per the ability of the joints of metal sheets to withstand the lightning current with or without perforation;

d) Table 1 – Clarifications that are more precise are given for parameters of the test current;

e) requirements for approved measuring system have been added under clause 7.9.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CENELEC shall not be held responsible for identifying any or all such patent rights.

1 Scope

This document defines the requirements and testing for joints of metal sheets, with or without insulating coatings, used as natural components in roofs, facades or walls of buildings, suitable to conduct lightning current in LPS where the interconnection of these metal sheets does not ensure durable electrical connection.

NOTE This document does not deal with the lightning interception capabilities of these components. The connection clamps for connecting the metallic sheet with the down conductor to the earth termination system are LPSC, tested according to EN 62561-1.

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.

EN 60068-2-52:1996, *Environmental testing - Part 2: Tests - Test Kb: Salt mist, cyclic (sodium chloride solution) (IEC 60068-2-52:1996)*

EN 62305-3:2011, *Protection against lightning - Part 3: Physical damage to structures and life hazard (IEC 62305-3:2010)*

EN 62561-1:2017, *Lightning Protection System Components (LPSC) - Part 1: Requirements for connection components (IEC 62561-1:2017)*

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

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

3 Terms and definitions

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

ISO and IEC maintain terminological 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
joint of metal sheets
electrical and mechanical connection between metal sheets with or without insulating coating

Note 1 to entry: Typical joints are shown in Figures A.1 and A.2 in Annex A.

Note 2 to entry: A thin coating of protective paint or about 1 mm asphalt or 0,5 mm PVC is not regarded as an insulator.

3.2
durability
ability to perform as required, under given conditions of use and maintenance, until the end of useful life

3.3
material connected metal sheets
connection between two metal sheets (e.g. by means of welding, brazing or soldering), which allows no relative movement of metal sheets due to thermal expansion and to environmental load, e.g. snow, ice, wind where the interconnection of these metal sheets does assure durable electrical connection