

Testing of lightning protection systems according to EN 62305-3

Test report No.: _____

Date: _____

1. General information

Location of the building to be tested

Name _____

Contact _____

Address _____

Telephone _____

Proprietor of the building to be tested/customer

Name _____

Contact _____

Address _____

Telephone _____ E-Mail _____

Address of the tester

Name _____

Contact _____

Address _____

Telephone _____ E-Mail _____

Address of the lightning protection system designer

Name _____

Contact _____

Address _____

Telephone _____ E-Mail _____

2. Details on the building

Name of the building/complex _____

Location _____

Use _____

Built in (year) _____

Extension (year) _____

Height of the building _____

Dimensions of the building (circumference) _____

Type of construction _____

Roof shape _____

Type of roofing _____

3. Prerequisites of testing

Description and drawing of the lightning protection system _____

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Lightning protection standards and regulations in effect at the time the building is constructed

- | | |
|---|--|
| <input type="checkbox"/> VDE 0185-305-3 (2006-10) | <input type="checkbox"/> VDE V 0185-100 (1996-01) |
| <input type="checkbox"/> VDE 0185-305-3: supplementary sheets 1-3 (2007-01) | <input type="checkbox"/> DIN V VDE V 0185-3 (2002-11) |
| <input type="checkbox"/> VDE 0185-305-4 (2006-10) | <input type="checkbox"/> DIN V VDE V 0185-4 (2002-11) |
| | <input type="checkbox"/> ABB (8 th edition) |
| | <input type="checkbox"/> DIN VDE 0185-1 (1982-11) |
| | <input type="checkbox"/> DIN VDE 0185-2 (1982-11) |

Class of LPS I II III IV

4. Test object

- External LPS Internal LPS

5. Type of testing

- | | | |
|---|--|--|
| <input type="checkbox"/> Test during the design process | <input type="checkbox"/> Acceptance test | <input type="checkbox"/> Repeat test (complete) |
| <input type="checkbox"/> Test during construction | <input type="checkbox"/> Additional test | <input type="checkbox"/> Repeat test (visual inspection) |

6. Test details

Measuring method _____
Measuring devices _____
Weather conditions _____

7. Information on the lightning protections system

Air-termination systems

Drawing No. _____

Mesh size $\geq 5 \times 5$ m $\geq 10 \times 10$ m $\geq 15 \times 15$ m $\geq 20 \times 20$ m
 $\geq 10 \times 20$ m ___ m x ___ m

Protective angle _____

Air-termination system _____

Material Aluminium Copper StSt (V2A) _____

Roof superstructures
(dimensions) _____

Other _____

Down-conductor systems

Down-conductor (description) _____

Material Aluminium Copper StSt (V2A) _____

Cross-section (mm) _____

Quantity/Test joint/No. Quantity: _____ No.: _____ Test joint: _____

Number of down-conductors _____

Other _____

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Earth-termination system

Material Steel, hot-dip galvanised StSt (V4A) Copper _____
Type/Design Type A: Horizontal earthing electrode Vertical earthing electrode
Type B: Foundation earthing electrode Surface earthing electrode
Other _____

Separation distance

Danger point Description _____ Location _____
Separation distance Required _____ Actual _____
Measures Yes _____
No _____
Other _____

Lightning equipotential bonding structure connected to metal installations

Water pipe(s)/waste disposal line(s) available connected, location of connection _____
Other _____

Lightning equipotential bonding structure connected to metal installations

Type of system TT TN-C TN-S TN-C-S IT
Lightning current arrester SPD Type 1 available: Yes No
Manufacturer _____ Product name _____
Location of installation _____
Proper function: Yes No _____
Other _____

Lightning equipotential bonding structure connected to IT installations

Data communication and telecommunication: _____
Measuring and control technology: _____
Coaxial conductors: _____
Lightning current arrester SPD Type 1 (D1 category) available: Yes No
Manufacturer _____ Product name _____
Installation location _____
Proper function: Yes No _____
Other _____

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8. Testing of technical documentation

- Complete and in line with standards

ok

- Yes No

9. Testing on site

Proper condition of the external LPS

- Installation of all conductors and system components
- Installation and condition of the air-termination system
- Installation and condition of the down-conductors
- Earth-termination system
 - All earth connections
 - Components affected by corrosion

- Yes No

- Yes No

- Yes No

- Yes No

- _____

- Yes No

- _____

- Yes No

Proper condition of the internal LPS

- Correct installation of all lightning current (SPD Type 1) and surge arresters (SPD Type 2)
 - Power supply system
 - Information technology system
- Damage or activation of the lightning current arrester
- Interruption of SPD back-up fuses
- Continuous lightning equipotential bonding for new supply connections inside the building which have been installed since the last inspection
- Equipotential bonding connections inside the building
- Separation distance between LPS and installations
- Changes which require additional protection measures
- _____
- _____
- _____

- Yes No

- Yes No

- Yes No

- Yes No

- Yes No

- Yes No

- Yes No

- Yes No

- Yes No

- Yes No

- Yes No

10. Measuring

Electrical conductivity of connections which are not visibly installed (test current recommended ≥ 200 mA)

- Air-termination systems
- Down-conductors
- Earth conductors
- Equipotential bonding conductors
- (recommended value < 1 ohm)
- _____
- _____
- _____

- Yes No

- Yes No

- Yes No

- Yes No

- Yes No

- Yes No

- Yes No

- Yes No

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Electrical conductivity of metal installations			
Gas	Water	Heating	Ventilation
Ω	Ω	Ω	Ω
Ω	Ω	Ω	Ω
Ω	Ω	Ω	Ω

Measuring the transition resistances R at all measuring points in order to determine the electrical conductivity of the conductors									
Test joint No.	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10
Value in ohm									
Test joint No.	10-11	11-12	12-13	13-14	14-15	15-16	16-17	17-18	18-19
Value in ohm									
Test joint No.	19-20	20-21	21-22	22-23	23-24	24-25	25-26	26-27	27-28
Value in ohm									

- Soil composition** sandy soil gravel boggy soil, marshy ground, humus soil
 stony concrete loamy soil, clay soil, farmland
- Soil state** dry humid frozen

<input type="checkbox"/> Measuring the earthing electrode resistance R_A of individual earthing electrodes when test joint is open <input type="checkbox"/> Measuring the loop resistance									
Test joint No.	1	2	3	4	5	6	7	8	9
Value in ohm									
Test joint No.	10	11	12	13	14	15	16	17	18
Value in ohm									
Test joint No.	19	20	21	22	23	24	25	26	27
Value in ohm									

Measuring the earthing electrode resistance of the entire system when test joints are closed _____ Ω

Visual inspection of the uncovered earthing electrode Yes No

Location of the uncovered earthing electrode _____

11. Total earthing resistance of the system

Type of measurement without protective conductor _____ Ω

with protective conductor _____ Ω

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Protection level	Visual inspection (year)	Complete inspection (year)	Critical systems complete inspection (year)
I and II	1	2	1
III and IV	2	4	1

Note: Lightning protection systems utilised in applications involving structures with a risk of explosion should be visually inspected every 6 months. Electrical testing of the installation should be performed once a year.
An acceptable exception to the yearly test schedule would be to perform the tests on a 14 to 15 month cycle where it is considered beneficial to conduct earth resistance testing over different times of the year to get an indication of seasonal variations.
Source: EN 62305-3; Table E.2 Maximum period between inspections of a LPS

Next inspection in (year) _____

Number of pages test report _____

Number of pages drawings _____

Number of photos for the test report _____

Number of pages of all enclosures _____

Enclosures of the test report _____

Drawing No. _____

Notes for the proprietor of the system:

- The proprietor has to remedy the defects.
- Check if additional internal lightning protection measures are necessary.
- In case of structural alteration or lightning strike, immediately contact the revision service.

Place _____, _____

Signature of the tester _____

Company: