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CNAS L12422

**TEST REPORT**

**IEC 62561-2**

**Lightning protection system components (LPSC)  
Part 2: Requirements for conductors and earth electrodes**

Report Number.....	P250203402
Date of issue.....	2025-04-01
Total number of pages.....	15
Testing Laboratory.....	Guangdong LNP Electrical Testing Technology Co., Ltd.
Testing location/ address.....	No. 101, Building B, Xinyongsheng Technology Park, Wenquan South Road No. 70, Xinwei Village, Shilong Town, Dongguan City, Guangdong Province, China.
Tested by (name + signature).....	Francis Lau / Test Engineer
Approved by (name + signature)...	Andy Chen / Project Director
Applicant's name.....	Indelec SA
Address.....	61, chemin des postes 59500 Douai - France
<b>Test specification:</b>	
Standard.....	IEC 62561-2:2018
Test procedure.....	Type test
Non-standard test method.....	N/A
Test item description.....	Air Rod
Trade Mark.....	Indelec
Manufacturer.....	Indelec SA.
Model/Type reference.....	LAR1200
Size.....	Diameter: 16mm, Length: 1200mm

This report is for your exclusive use. Any copying or replication of this report to or for any other person or entity, or use of our name or trademark, is permitted only with our prior written permission. This report sets forth our findings solely with respect to the test samples identified herein. The results set forth in this report are not indicative or representative of the quality or characteristics of the lot from which a test sample was taken or any similar or identical product unless specifically and expressly noted. Our report includes all of the tests requested by you and the results thereof based upon the information that you provided to us. You have 60 days from date of issuance of this report to notify us of any material error or omission caused by our negligence, provided, however, that such notice shall be in writing and shall specifically address the issue you wish to raise. A failure to raise such issue within the prescribed time shall constitute your unqualified acceptance of the completeness of this report, the tests conducted and the correctness of the report contents. Unless specific mention, the uncertainty of measurement has been explicitly taken into account to declare the compliance or non-compliance to the specification.



Copy of marking plate

Description	Air Rod
Model	LAR1200
Trade Mark	Indelec
Size	16mm (diameter) x 1200mm (length)



<b>Test item particulars.....:</b> Air Rod	
	<input checked="" type="checkbox"/> air-termination rod; <input type="checkbox"/> air-termination conductor; <input type="checkbox"/> down-conductor; <input type="checkbox"/> earth electrode <input type="checkbox"/> earth rod; <input type="checkbox"/> earth conductor; <input type="checkbox"/> earth plate; <input type="checkbox"/> earth rod coupler;
<b>Material.....:</b>	Pure Copper
<b>Cross-sectional area, dimensions and shape.....:</b>	Cross-sectional area: 201mm <sup>2</sup> (Required ≥50mm <sup>2</sup> ), Dimensions: Diameter 16mm, Shape: Solid round
<b>Possible test case verdicts:</b>	
- test case does not apply to the test object..... :	N/A
- test object does meet the requirement..... :	P (Pass)
- test object does not meet the requirement..... :	F (Fail)
<b>Testing.....:</b>	
<b>Date of receipt of test item..... :</b>	2025-03-11
<b>Date (s) of performance of tests.....:</b>	2025-03-18 to 2025-04-01
<b>General remarks:</b>	
<p>The test results presented in this report relate only to the object tested.          This report shall not be reproduced, except in full, without the written approval of the Issuing testing laboratory.          "(See Enclosure #)" refers to additional information appended to the report.          "(See appended table)" refers to a table appended to the report.</p> <p>Throughout this report a <input type="checkbox"/> comma / <input checked="" type="checkbox"/> point is used as the decimal separator.</p>	

**General product information:**

1. Air Rod was made of pure copper.
2. The tests were conducted on 6 samples as listed in table below:

Clause	Test items	Sample No.:
4.2	Documentation	LAR1200-#4; LAR1200-#5; LAR1200-#6
5.5	Marking	
4.3	Dimension Table 1	
5.2.6	Tensile test	
5.2.5	Electrical resistivity	
5.2.4	Environmental test	LAR1200-#1; LAR1200-#2; LAR1200-#3

3. Name and address of factory:

Indelec SA.  
61, chemin des postes 59500 Douai - France

Clause	Requirement - Test	Result - Remark	Verdict									
4	Requirements		--									
4.1	General		--									
	Conductors and earth electrodes shall be designed in such a manner that, when they are installed in accordance with the manufacture's instructions, their performance shall be reliable, stable and safe to persons and surrounding equipment.		P									
	The choice of a material depends on its ability to match the particular application requirements such as life cycle of the material, effects from galvanic corrosion and compatibility with other interconnected materials or services.		P									
	A summary of the requirements are given in Annex C and Annex D and their corresponding test are given in Annex A, Annex B and the sequence of test of in Annex E (Figure E.1), Annex F (Figure F.1) and Annex G (Figure G.1)	According to Annex C	P									
4.2	Documentation		--									
	The manufacturer or supplier of the conductors and earth electrodes shall provide adequate information in their literature to ensure that the installer of the conductors and earth electrodes can select and install the materials in a suitable and safe manner, in accordance with IEC 62305-3 and IEC 62305-4.		P									
	Compliance is checked by inspection.		P									
4.3	Air-termination conductors, air-termination rods, earth lead-in and down-conductors	Air-termination rods	--									
	The material, configuration and cross-sectional area of the conductors and rods, shall be in accordance with Table 1. Their mechanical and electrical characteristics shall be in accordance with Table 2.	Solid round $\geq 50\text{mm}^2$ (cross-sectional area) of Table1 Model No.: LAR1200 <table border="1" data-bbox="997 1384 1348 1579"> <thead> <tr> <th>#4</th> <th>#5</th> <th>#6</th> </tr> </thead> <tbody> <tr> <td>15.92 mm</td> <td>15.91 mm</td> <td>15.89 mm</td> </tr> <tr> <td>199.06 mm<sup>2</sup></td> <td>198.81 mm<sup>2</sup></td> <td>198.31 mm<sup>2</sup></td> </tr> </tbody> </table>	#4	#5	#6	15.92 mm	15.91 mm	15.89 mm	199.06 mm <sup>2</sup>	198.81 mm <sup>2</sup>	198.31 mm <sup>2</sup>	P
#4	#5	#6										
15.92 mm	15.91 mm	15.89 mm										
199.06 mm <sup>2</sup>	198.81 mm <sup>2</sup>	198.31 mm <sup>2</sup>										
	Other materials may be used if they possess equivalent mechanical and electrical characteristics and corrosion resistance properties for the intended application.	Copper	N/A									
	Other configurations may be used if the relevant dimensions are met.	Rod solid round	N/A									
	Coated conductors and rods shall be corrosion resistant and the coating shall exhibit good adherence to base material.	No coated	N/A									
	Compliance is checked by the tests of 5.2.2, 5.2.3, 5.2.4, 5.2.5 and 5.2.6.		P									
4.4	Earth electrodes	Air-termination rods	N/A									

Clause	Requirement - Test	Result - Remark	Verdict
4.5	Marking		--
	All products complying with this document shall be marked at least with the manufacturer's or responsible vendor's name or trade mark or identifying symbol.	Indelec Trade mark on the samples body.	P
	Where this proves to be impractical, the marking in accordance with the identifying symbol may be given on the smallest packing unit.	Other information was given on the smallest packing unit	P
	Compliance is checked in accordance with 5.5.		P
5	Tests		--
5.1	General conditions for tests		--
	Tests according to this document are type tests. These tests are of such a nature that, after they have been performed, they need not be repeated unless changes are made to the materials, design or type of manufacturing process, which might change the performance characteristics of the product.		P
	- Unless otherwise specified, all tests are carried out on new specimens.	All test were carried out on new specimens.	P
	-Unless otherwise specified, three specimens are subjected to the tests and the requirements are satisfied if all the tests are met.	six specimens	P
	-If only one of the specimens does not satisfy a test, due to an assembly or a manufacturing fault, that test and any preceding one which may have influenced the results of the test shall be repeated and also the tests that follow shall be carried out in the required sequence on another full set of specimens, all of which shall comply with the requirements.		N/A
	The applicant, when submitting a set of specimens, may also submit an additional set of specimens, which may be necessary should one specimen fail. The testing laboratory will then, without further request, test the additional set of specimens and will reject it only if a further failure occurs. If the additional set of specimens is not submitted at the same time, the failure of one specimen will entail rejection.		P
5.2	Conductors, air-termination rods, earth lead-in rods and earth electrodes (except earth rods)	Air-termination	--
5.2.1	General		--
	Air-termination conductors, air-termination rods, earth lead-in rods, down-conductors and earth electrodes shall be subjected to the following tests to confirm their suitability for the intended application.		P

Clause	Requirement - Test	Result - Remark	Verdict																								
	Conductors, air-termination rods, earth lead-in rods and earth electrodes (except earth rods) shall be subjected to the tests according to Annex E.		P																								
5.2.2	Test for thickness of coating	No coated	N/A																								
5.2.3	Bend and adhesion test for coated conductors	No coated	N/A																								
5.2.4	Environmental test for coated materials		--																								
5.2.4.1	General conditions for tests	Model No.: LAR1200	--																								
	The electrical resistance over a length of 100 mm shall be measured prior to the environmental test on all specimens used in and complying with 5.2.3, air-termination rods, earth lead-in rods, down-conductors and earth electrodes.	Measured at 100 mm, Unit: mΩ, <table border="1" data-bbox="991 689 1353 831"> <thead> <tr> <th></th> <th>#1</th> <th>#2</th> <th>#3</th> </tr> </thead> <tbody> <tr> <td>R<sub>0</sub></td> <td>0.008</td> <td>0.009</td> <td>0.008</td> </tr> <tr> <td>R<sub>1</sub></td> <td>0.011</td> <td>0.010</td> <td>0.010</td> </tr> </tbody> </table>		#1	#2	#3	R <sub>0</sub>	0.008	0.009	0.008	R <sub>1</sub>	0.011	0.010	0.010	P												
	#1	#2	#3																								
R <sub>0</sub>	0.008	0.009	0.008																								
R <sub>1</sub>	0.011	0.010	0.010																								
	Upon completion of the above measurements all specimens shall be subjected to an environmental test as specified in Clause A.1, followed by a humid sulphurous atmosphere treatment as specified in Clause A.2.	Three specimens were conducted to Salt mist treatment, Humid sulphurous atmosphere treatment	P																								
5.2.4.2	Acceptance criteria		--																								
	After the test, the specimens shall satisfy the following criteria:		P																								
	The electrical resistance over a 100 mm length measured after the tests shall not exceed the resistance value measured before the tests by more than 50 %	$R_1 < 1.5 R_0$	P																								
	The base metal shall not exhibit any visual corrosive deterioration when inspected with normal or corrected vision without magnification.	No visual corrosive deterioration.	P																								
5.2.5	Electrical resistivity test		--																								
5.2.5.1	General conditions for tests		--																								
	A sample length of conductor, approximately 1,2 m long, should be used for the test. The resistance measurement should be taken over a 1 m (±1 mm) distance, using a microohmmeter, and the reading corrected to a temperature of 20°C using appropriate correction factors.	Model No.: LAR1200; <table border="1" data-bbox="991 1615 1353 1890"> <thead> <tr> <th></th> <th>#4</th> <th>#5</th> <th>#6</th> </tr> </thead> <tbody> <tr> <td>Measured cross-sectional area (mm<sup>2</sup>)</td> <td>199.06</td> <td>198.81</td> <td>198.31</td> </tr> <tr> <td>Measured Length (m)</td> <td>1</td> <td>1</td> <td>1</td> </tr> <tr> <td>Measure resistance (mΩ) at 24.1°C</td> <td>0.088</td> <td>0.089</td> <td>0.089</td> </tr> <tr> <td>Resistance corrected to 20°C (mΩ)</td> <td>0.087</td> <td>0.088</td> <td>0.088</td> </tr> <tr> <td>Electrical resistivity (μΩm)</td> <td>0.017</td> <td>0.017</td> <td>0.017</td> </tr> </tbody> </table>		#4	#5	#6	Measured cross-sectional area (mm <sup>2</sup> )	199.06	198.81	198.31	Measured Length (m)	1	1	1	Measure resistance (mΩ) at 24.1°C	0.088	0.089	0.089	Resistance corrected to 20°C (mΩ)	0.087	0.088	0.088	Electrical resistivity (μΩm)	0.017	0.017	0.017	P
	#4	#5	#6																								
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5.2.5.2	Acceptance criteria		--																								
	The specimens are deemed to have passed the tests if they comply with the requirements of Table 2.	Maximum electrical resistivity ≤ 0.018 μΩm (Copper) of Table 2.	P																								

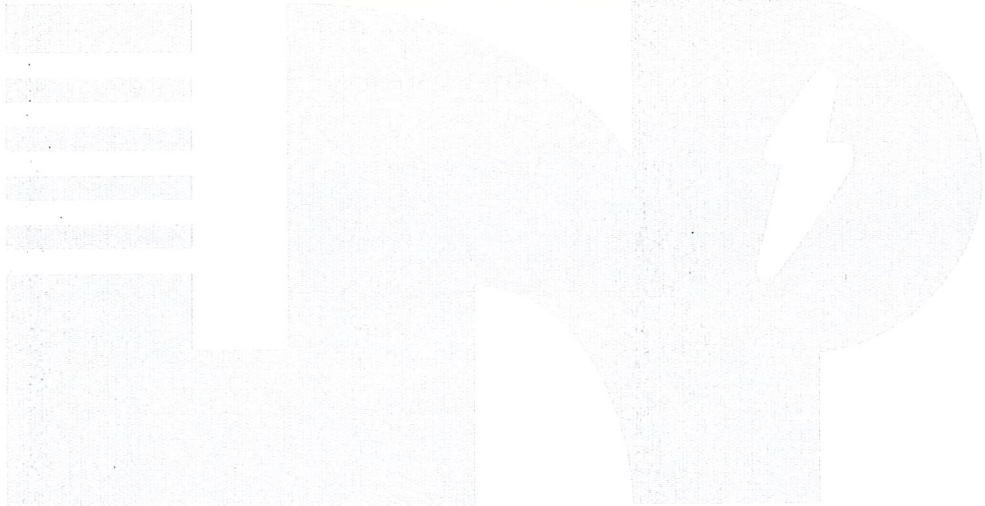
Clause	Requirement - Test	Result - Remark	Verdict						
5.2.6	Tensile test		--						
5.2.6.1	General conditions for tests	Model No.: LAR1200	--						
	For the methodology of carrying out tensile strength see ISO 6892-1. For the testing of air-termination rods and earth lead-in rods, the test specimen shall be tested according to ISO 6892-1.	<table border="1"> <thead> <tr> <th>#4</th> <th>#5</th> <th>#6</th> </tr> </thead> <tbody> <tr> <td>344 N/mm<sup>2</sup></td> <td>304 N/mm<sup>2</sup></td> <td>304 N/mm<sup>2</sup></td> </tr> </tbody> </table>	#4	#5	#6	344 N/mm <sup>2</sup>	304 N/mm <sup>2</sup>	304 N/mm <sup>2</sup>	P
#4	#5	#6							
344 N/mm <sup>2</sup>	304 N/mm <sup>2</sup>	304 N/mm <sup>2</sup>							
5.2.6.2	Acceptance criteria		--						
	The specimens are deemed to have passed the tests if they comply with the requirements of Table 2, for the earth conductors.	Copper: Tensile strength 200 to 450 N/mm <sup>2</sup> of Table 2.	P						
5.3	Earth rods	Air-termination rods	N/A						
5.4	Couplers for earth rods	Air-termination rods	N/A						
5.5	Marking test		--						
5.5.1	General conditions for tests		--						
	The marking is checked by inspection and by rubbing it by hand for 15 s with a piece of cloth soaked with water and again for 15 s with a piece of cloth soaked with white spirit/mineral spirit.		N/A						
	Marking made by moulding, pressing or engraving is not subjected to this test.	Marking made by moulding	P						
5.5.2	Acceptance criteria		--						
	The specimen is deemed to have passed the test if the marking remains legible.		N/A						
6	Electromagnetic compatibility (EMC)	No such parts	N/A						
7	Structure and content of the test report		--						
7.1	General		--						
	The purpose of Clause 7 is to provide general requirements for laboratory test reports and to promote clear, complete reporting procedures for laboratories submitting test reports.		P						
	The results of each test carried out by the laboratory shall be reported accurately, clearly, unambiguously and objectively, in accordance with any instructions in the test methods. The results shall be given in a test report and shall include all the information necessary for the interpretation of the test results and all information required by the method used.		P						
	Particular care and attention shall be paid to the arrangement of the report, especially with regard to presentation of the test data and ease of assimilation by the reader. The format shall be carefully and specifically designed for each type of test carried out, but the headings shall be standardized as indicated below.		P						

Clause	Requirement - Test	Result - Remark	Verdict
	The structure of each report shall include at least information according to 7.2 to 7.1 0.		P
7.2	Report identification		--
	The following information shall be included:		--
	a) a title or subject of the report;	TEST REPORT	P
	b) name, address, e-mail and telephone number of the test laboratory;	Name: Guangdong LNP Electrical Testing Technology Co., Ltd. Address: No. 101, Building B, Xinyongsheng Technology Park, Wenquan South Road No. 70, Xinwei Village, Shilong Town, Dongguan City, Guangdong Province, China. Email: leo@lnptest.com Tel: +86-769-81329986	P
	c) name, address, e-mail and telephone number of the sub test laboratory where the test was carried out if different from the company which has been assigned to perform the test;		N/A
	d) unique identification number (or serial number) of the test report;	P250203402	P
	e) name and address of the vendor;	Name: Indelec SA. Address: 61, chemin des postes 59500 Douai - France	P
	f) report shall be paginated and the total number of pages indicated;	Total 15 pages	P
	g) date of issue of the report;	2025-04-01	P
	h) date(s) of performance of the test(s);	2025-03-18	P
	i) signature and title, or an equivalent identification of the person(s) authorized to sign for the testing laboratory for the content of the report;	Andy Chen / Project Director	P
	j) signature and title of person(s) conducting the tests;	Francis Lau / Test Engineer	P
	k) "This type test report may not be reproduced other than in full, except with the prior written approval of the issuing testing laboratory. This type test report only covers the samples submitted for test and does not produce evidence of the quality for series production."	This type test report may not be reproduced other than in full, except with the prior written approval of the issuing testing laboratory. This type test report only covers the samples submitted for test and does not produce evidence of the quality for series production	P
7.3	Specimen description	Air Rod	--
	a) Sample description.	Diameter: 16mm, Length: 1200mm	P

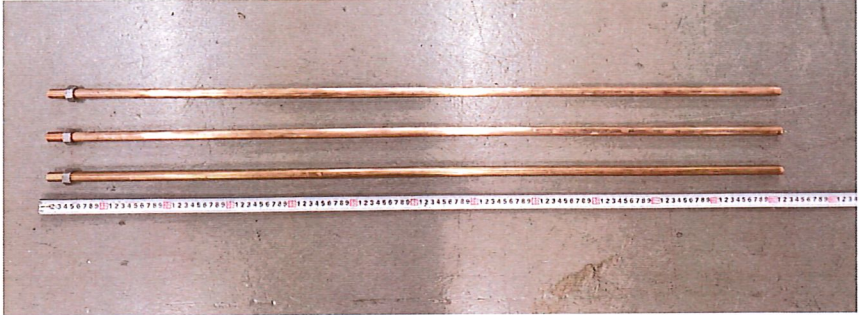
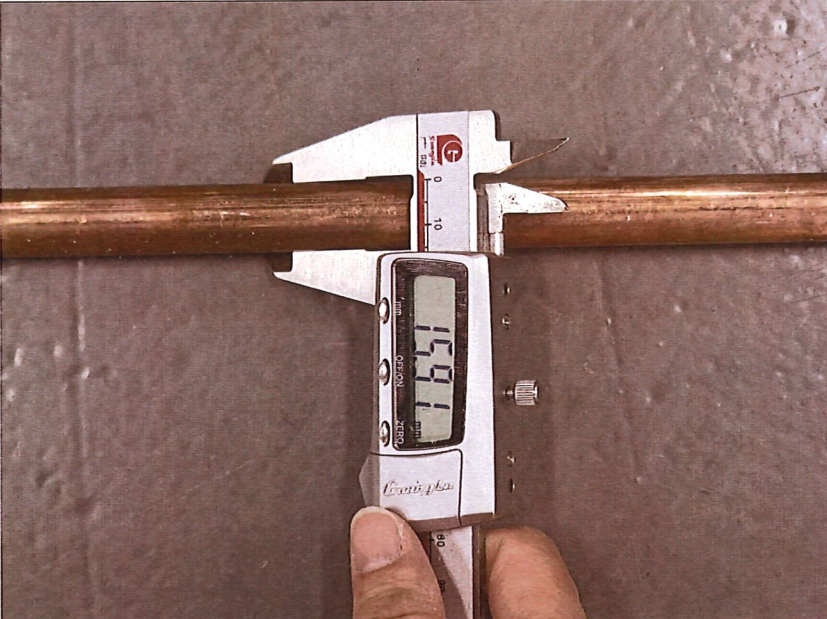
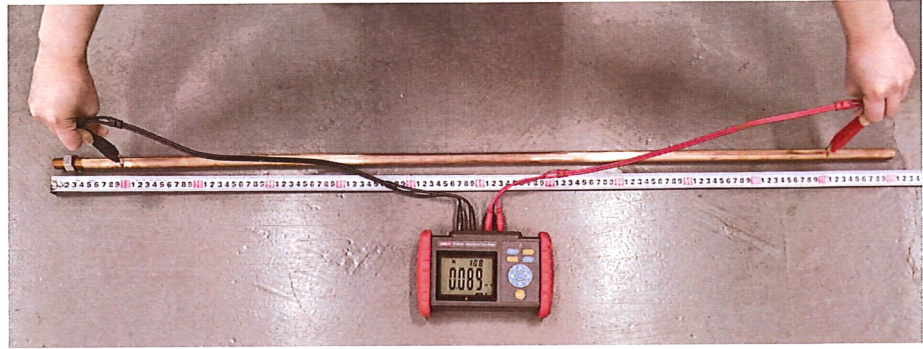
Clause	Requirement - Test	Result - Remark	Verdict
	b) Detailed description and unambiguous identification of the test sample and/or test assembly.	LAR1200-#1 to #6	P
	c) Characterization and condition of the test sample and/or test assembly.	Copper rod	P
	d) Sampling procedure, where relevant.		N/A
	e) Date of receipt of the test items.	2025-03-11	P
	f) Photographs, drawings or any other visual documentation, if available.	Refer to annex 1	P
7.4	Conductor		--
	a) Conductor material.	Copper	P
	b) Cross-sectional area, dimensions and shape. It is recommended that the actual cross-sectional area also be given.	Cross-sectional area: 201mm <sup>2</sup> Dimensions: 1200mm*16mm, Shape: Rod Solid round	P
7.5	Standards and references		--
	a) Identification of the test standard used and the date of issue of the standard.	IEC 62561-2:2018	P
	b) Other relevant documentation with the documentation date.	IEC 60068-2-53:1996; IEC 62305-3; IEC 62305-4; ISO 6982-1:1988; ISO 6988:1985	P
7.6	Test procedure		--
	a) Description of the test procedure.	According to Annex F	P
	b) Justification for any deviations from, additions to or exclusions from the referenced standard.	No deviations	N/A
	c) Any other information relevant to a specific test, such as environmental conditions.		P
	d) Configuration of testing assembly.		P
	e) Location of the arrangement in the testing area and measuring techniques.	Refer to annex 1	P
7.7	Testing equipment, description		--
	Description of equipment used for every test conducted, e.g. generator, conditioning/ageing device.	Refer to List of test equipment used	P
7.8	Measuring instruments description		--
	Characteristics and calibration date of all instruments used for measuring the values specified in the standard, e.g. radius gauge shunts, tensile testing machine, extensometer, ohmmeter, torque meter, thickness caliper gauge, etc.	Refer to List of test equipment used	P
7.9	Results and parameters recorded		--
	a) Required passing criteria for each test, defined by the standard.		P

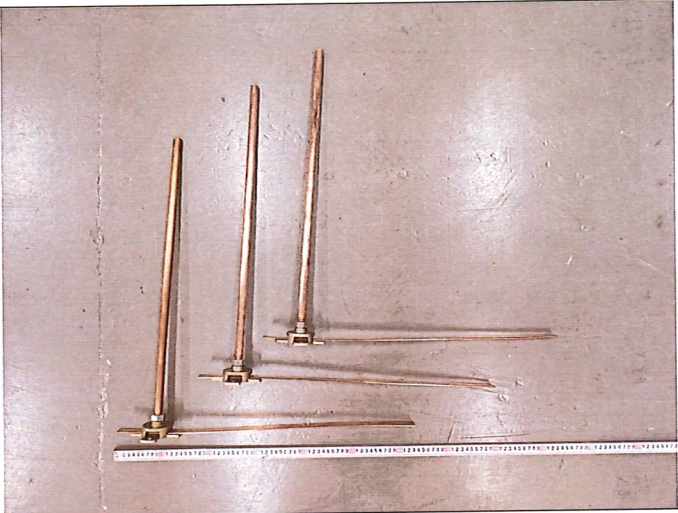
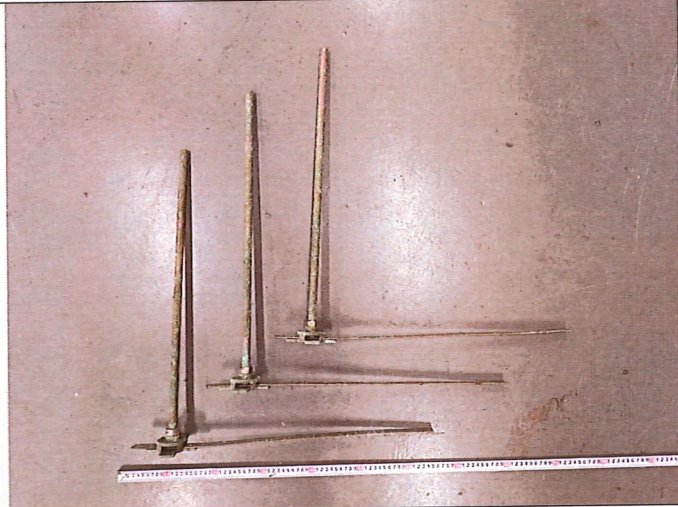

Clause	Requirement - Test	Result - Remark	Verdict
	b) Relevant observed or derived results of the tests.		P
	All results shall be presented by means of tables, graphs, drawings, photographs or other documentation of visual observations as appropriate.		P
7.10	Statement of pass/fail		--
	Statement that the specimen passed or failed the tests shall be reported. If the specimen has failed, a description of the failure is necessary.	Pass	P
Annex A (normative)	Environmental test for conductors, air-termination rods and earth lead-in rods		--
A.1	General		--
	The condition/ageing test consists of a salt mist treatment as specified in Clause A.2 followed by humid sulphurous atmosphere treatment as specified in clause A.3 and an additional ammonia atmosphere treatment for specimens where any component part is made of copper alloy with a copper content less than 80%, as specified in Clause A.4.	A.2 and A.3 tests were conducted. Copper content is 99.9%, the result of chemical composition is from mill cert.	P
	The manufacturer or supplier shall provide proof of the copper content of any part of the assembly made from a copper alloy.		P
A.2	Salt mist treatment		--
	The salt mist treatment shall be in accordance with IEC 60068-2-52:1996 except for Clauses 7, 10 and 11 which are not applicable. The test is carried out using severity (2).	Severity (2) 35°C, 2h;	P
	If the salt mist chamber maintains the temperature conditions as specified in 9.3 of IEC 60068-2-52:1996 and relative humidity of not less than 90% then the specimen can remain in the chamber for the humidity storage period.	40°C, 93% RH, 22h	P
A.3	Humid sulphurous atmosphere treatment		--
	The humid sulphurous atmosphere treatment shall be in accordance with ISO 6988:1985 with seven cycles with a volume concentration of sulphur dioxide of $667 \times 10^{-6} \pm 25 \times 10^{-6}$ , except for Clauses 9 and 10 which are not applicable.	$667 \times 10^{-6}$	P
	Each cycle which has a duration of 24 h is composed of heating period of 8 h at a temperature of $40^{\circ}\text{C} \pm 3^{\circ}\text{C}$ in the humid saturated atmosphere which is followed by a rest period of 16 h. After that, the humid sulphurous atmosphere is replaced.	40°C, 8h and in the humid saturated atmosphere which is followed by a rest period of 16 h.	P
	If the test chamber maintains the temperature conditions as specified in 6.5.2 of ISO 6988:1985 then the specimen can remain in the chamber for the storage period.		P

Clause	Requirement - Test	Result - Remark	Verdict
A.4	Ammonia atmosphere treatment		N/A
Annex B (normative)	Electrical test		N/A
Annex C (normative)	Requirements for conductors		N/A
Annex D (normative)	Requirements for earth electrodes		N/A
Annex E (normative)	Flow chart of tests for air-termination conductors, air-termination rods, earth lead-in rods, down-conductors, earth conductors and earth plates	air-termination rods	P
Annex F (normative)	Flow chart of tests for earth rods		N/A
Annex G (normative)	Flow chart of tests of couplers for earth rods		N/A



**Annex 1: Photos of samples**

<p>Details of:</p> <p><b>View:</b></p> <p><input checked="" type="checkbox"/> General</p> <p><input type="checkbox"/> Front</p> <p><input type="checkbox"/> Rear</p> <p><input type="checkbox"/> Right</p> <p><input type="checkbox"/> Left</p> <p><input type="checkbox"/> Top</p> <p><input type="checkbox"/> Bottom</p>	<p style="text-align: center;">External view</p> 
<p>Details of:</p> <p><b>View:</b></p> <p><input checked="" type="checkbox"/> General</p> <p><input type="checkbox"/> Front</p> <p><input type="checkbox"/> Rear</p> <p><input type="checkbox"/> Right</p> <p><input type="checkbox"/> Left</p> <p><input type="checkbox"/> Top</p> <p><input type="checkbox"/> Bottom</p>	<p style="text-align: center;">External view</p> 
<p>Details of:</p> <p><b>View:</b></p> <p><input checked="" type="checkbox"/> General</p> <p><input type="checkbox"/> Front</p> <p><input type="checkbox"/> Rear</p> <p><input type="checkbox"/> Right</p> <p><input type="checkbox"/> Left</p> <p><input type="checkbox"/> Top</p> <p><input type="checkbox"/> Bottom</p>	<p style="text-align: center;">Electrical Resistivity Test</p> 

<p>Details of:</p> <p><b>View:</b></p> <p><input checked="" type="checkbox"/> General</p> <p><input type="checkbox"/> Front</p> <p><input type="checkbox"/> Rear</p> <p><input type="checkbox"/> Right</p> <p><input type="checkbox"/> Left</p> <p><input type="checkbox"/> Top</p> <p><input type="checkbox"/> Bottom</p>	<p style="text-align: center;">Before test</p> 
<p>Details of:</p> <p><b>View:</b></p> <p><input checked="" type="checkbox"/> General</p> <p><input type="checkbox"/> Front</p> <p><input type="checkbox"/> Rear</p> <p><input type="checkbox"/> Right</p> <p><input type="checkbox"/> Left</p> <p><input type="checkbox"/> Top</p> <p><input type="checkbox"/> Bottom</p>	<p style="text-align: center;">After Environmental test</p> 
<p>Details of:</p> <p><b>View:</b></p> <p><input checked="" type="checkbox"/> General</p> <p><input type="checkbox"/> Front</p> <p><input type="checkbox"/> Rear</p> <p><input type="checkbox"/> Right</p> <p><input type="checkbox"/> Left</p> <p><input type="checkbox"/> Top</p> <p><input type="checkbox"/> Bottom</p>	<p style="text-align: center;">After Tensile test</p> 

**Annex 2: List of test equipment used**

Clause	Measurement / testing	Testing / measuring equipment / material used, (Equipment ID)	Range used	Last Calibration date	Calibration due date
Annex A.2	Salt mist treatment	Salt mist treatment tester / LNP-SB-086	1-2ml/80cm <sup>2</sup> /h, 35°C	2024/5/23	2025/5/22
Annex A.2	Salt mist treatment	Temp. & Hum. Chamber / LNP-SB-011	-40°C~150°C; 30%~98% RH	2024/11/22	2025/11/21
Annex A.3	Humid sulphurous atmosphere treatment	Humid sulphurous atmosphere treatment Machine / LNP-SB-088	667x10 <sup>-6</sup> , 40°C	2024/6/21	2025/6/20
5.2.5	Electrical resistivity test	Digital Micro Ohm Meter / LNP-SB-085	0.001mΩ ~ 300kΩ	2024/5/23	2025/5/22
5.2.5	Electrical resistivity test	Steel tap / LNP-SB-108	0mm~7.5m	2024/8/8	2025/8/7
5.2.5	Electrical resistivity test	Digital Caliper / LNP-SB-025	0mm~150mm	2024/11/22	2025/11/21
5.2.6	Tensile test	Tension test Equipment / LNP-SB-087	800N~200kN	2024/5/23	2025/5/22
--	Ambient	Hygrothermograph / LNP-SB-111	-20°C~60°C; 0%~95%RH	2024/8/8	2025/8/7
--	Ambient	Hygrothermograph / LNP-SB-112	-20°C~60°C; 0%~95%RH	2024/8/8	2025/8/7
--	Ambient	Hygrothermograph / LNP-SB-137	-20°C~60°C; 0%~95%RH	2025/2/21	2026/2/20
--	Ambient	Hygrothermograph / LNP-SB-140	-20°C~60°C; 0%~95%RH	2025/2/21	2026/2/20

\*\*\*END OF REPORT\*\*\*

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